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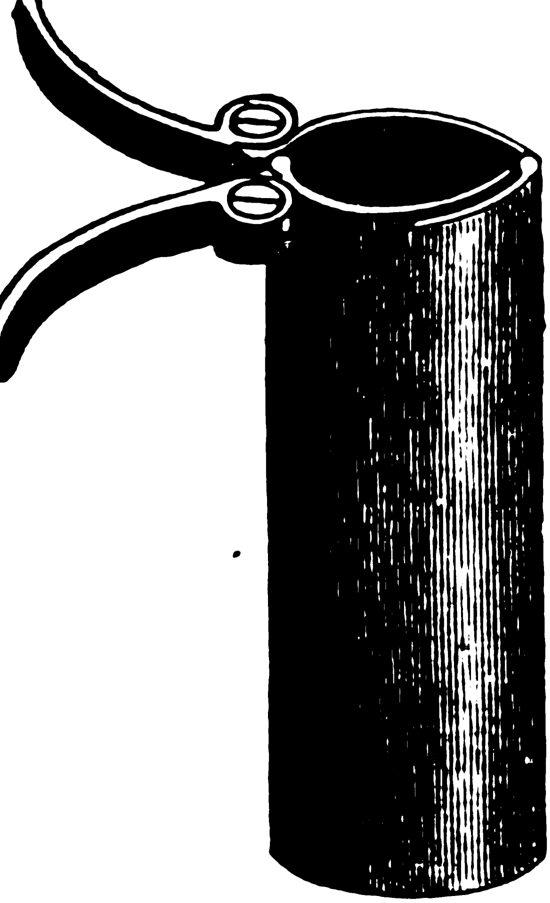

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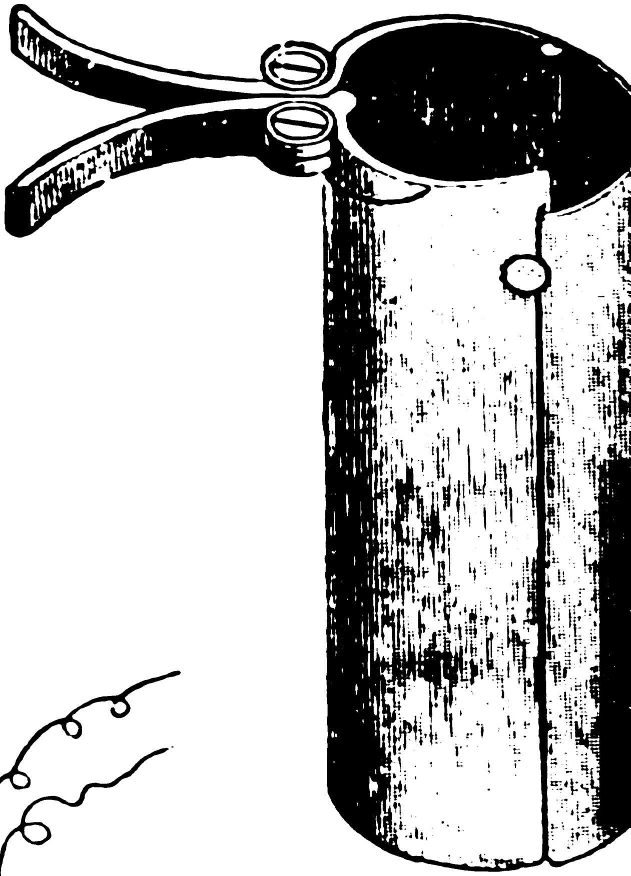

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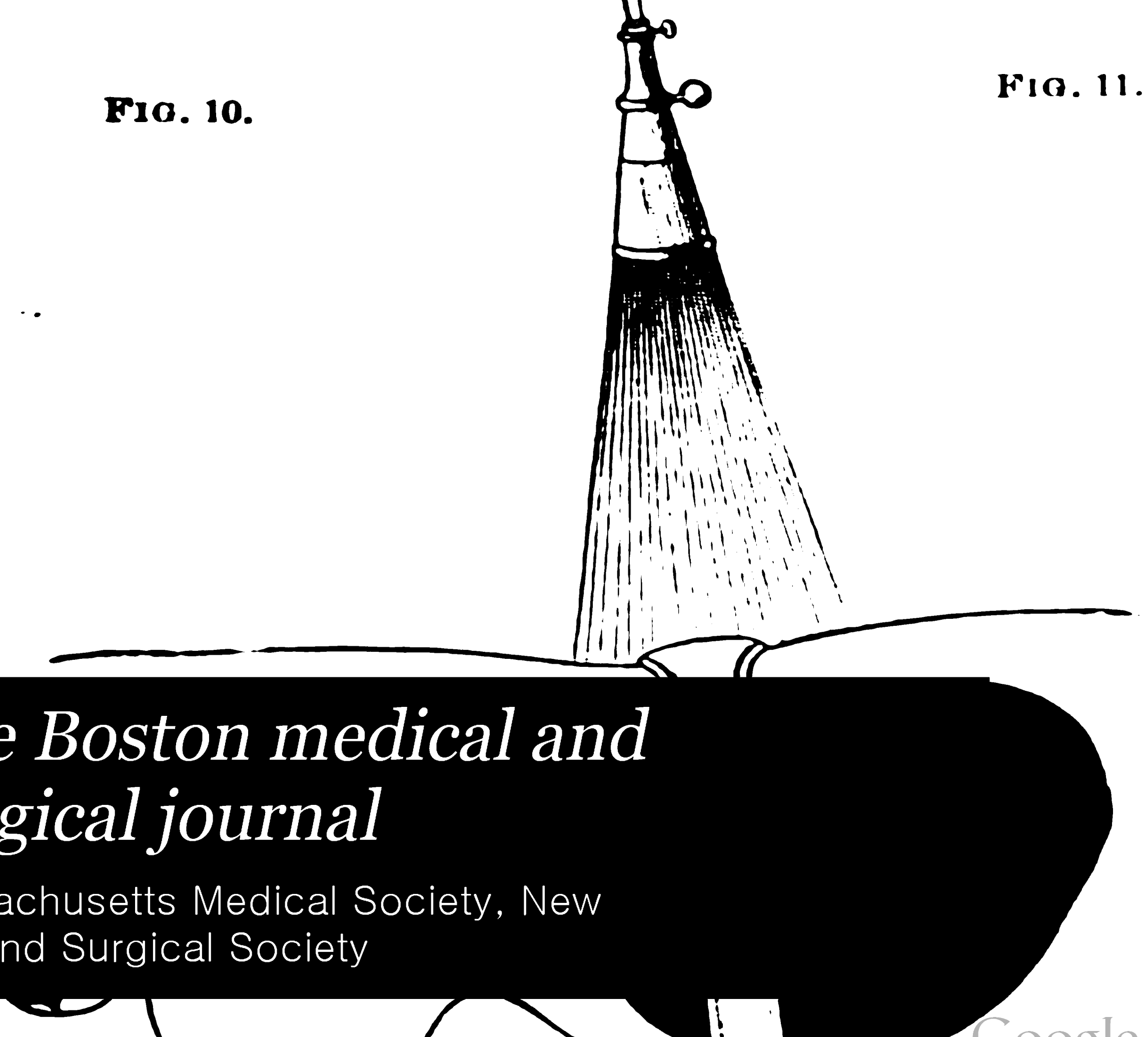

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SMITH, H. L., M.D.
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STEDMAN, C. ELLERY, M.D.
STOKES, WILLIAM R., M.D.
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WORCESTER, A., A.M., M.D.
WRIGHT, JAMES H., M.D.
WYMAN, MORRILL, M.D.
YOUNG, C. D., M.D.

INDEX TO VOLUME CXXXIII.

Abbot, E. S. Immunity and cure, 613.

Abdomen. Penetrating wounds of the abdomen, Mumford, J. G., 81, 87; three cases of laparotomy for penetrating wounds of the abdomen, Scudder, C. L., 85, 88; a case of stab wound of the abdomen, with wound of the intestine, protrusion of the intestine through the wound, operation, recovery, Monks, G. H., 87, 88; a case of abdominal nephrectomy for cystic kidney, recovery, Atwood, C. A., 440; clinical experience in abdominal surgery at the Massachusetts General Hospital, Warren, J. C., 488, 507, 536, 537, 582; abdominal section for puerperal septicemia, Baldy, J. M., 493; four months' hospital work in abdominal surgery, Johnson, F. W., 539, 561; a case of penetrating wound of the abdomen and large intestine, Thayer, F. C., 588; a method of preventing thirst following celiotomy, Humiston, W. H., 597; celiotomy in general suppurative peritonitis, with the report of a case, Porter, M. F., 597; peritoneal irrigation and drainage, Cordier, A. H., 598; three cases of hysterectomy following celiotomy for pus-tubes, Carstens, J. H., 598.

Abortion. A case of criminal abortion with peculiar features, Birge, W. S., 412, 424.

Acne and the seborrheic condition, 328.

Adami, J. G. A case of madura foot disease (mycetoma pedis), 18.

Addison's Disease. A case of Addison's disease, Winslow, K., 36.

Albert. Palliative trephining in cerebral tumor, 123.

Alcohol. Fatal case of acute alcoholic poisoning in a child, Devine, W. H., 545.

Alexander's Operation. Experience with ventro-fixation and Alexander's operation, Smith, A. L., 471; Alexander's operation, Cleveland, C., 471.

Allen. Erysipelas, 593.

Allen, G. W. The treatment of prostatic hypertrophy, 192.

Anatomy. Abnormal attachment of the atlas to the base of the skull, Slade, D. D., 57; the relations of the lymphatic system to the various regions, Gerrish, F. H., 68; a curious anomaly, Lannelongue, 331; recent progress in anatomy, 492.

Andrews, E. W. Imbrication or lap-joint method, a plastic operation for hernia, 627.

Anesthesia. The present status of anesthesia, Gay, G. W., 93; influence of ether upon the kidneys, Weir, R. F., 93; the influence of ether narcosis upon the genito-urinary tract, Deaver, J. B., 94; circumstances under which chloroform is preferable to ether as an anesthetic, Gay, G. W., 433; deaths under anesthetics, chloroform, Cripps, E. C., 454; studies in anesthesia and anesthetics, Keefe, D. E., 533.

Aneurism. Fatal case of traumatic aneurism of aberrant right subclavian artery, Smith, P., 74; a case of aneurism of the thoracic aorta, Crawford, S. M., 263.

Annus Medicus, MDCCCXCV, 650.

Anthony, F. W. Diffuse hypertrophy of the breasts, 185.

Antitoxin. Recent accidents from antitoxin, 119; on the immunizing and curative effect of antitoxic blood-serum of the sheep in typhoid intoxication, Peifer, 146; two cases of diphtheria successfully treated by antitoxin, Phelps, J. S., 184; the etiology of diphtheria and the use of antitoxin, Ernst, H. C., 228; the preparation of diphtheria antitoxin, Goodale, J. L., 235; diphtheria and the antitoxin treatment, Robie, W. F., 238; results of the antitoxin treatment in Germany, 251; the treatment of tetanus with tetano-antitoxin, Marson, 251; the clinical use of diphtheria antitoxin, Park, W. H., 255; antitoxin in diphtheria, Withington, C. F., 260; antitoxin in diphtheria, Sears, G. G., 261; diphtheria antitoxin at the Newton Hospital, Winslow, K., 503; the bacterial examinations of nine autopsies on cases of diphtheria treated with antitoxin, Stokes, W. R., 581; immunity and cure, Abbot, E. S., 613.

Apoplexy. A unique case of apoplexy, Bibber, R. D., 193.

Apostoli. Electrotherapy as a means of diagnosis in gynecology, 382.

Appendicitis. Clinical experience in abdominal surgery at the Massachusetts General Hospital, Warren, J. C., 488, 507, 536, 567, 582; observations upon relapsing appendicitis, with a record of thirty-two operations without a death, Cabot, A. T., 641.

Army. Medical officers of the State militia and the Army Medical School, Washington, 577.

Asepsis. Aseptic midwifery among the very poor, Young, C. D., 4.

Atmosphere. Mean atmospheric temperatures, Phillips, W. F. R., 211; some observations which appear to establish the aerial transportation of malarial germs, Newton, R. C., 212.

Atwood, C. A. A case of abdominal nephrectomy for cystic kidney, recovery, 440.

Australia. Medicine and surgery among the Australian aborigines, Robertson, J. S., 500.

Bacillus. Influenza bacillus and abscess of the lung, 304.

Bacteriology. Recent experiments on the parasites of malaria, 22; influenza bacillus and abscess of the lung, 304; the gonococcus, Chadwick, H. D., 337, 371; immunity and cure, Abbot, E. S., 613.

Baldy, J. M. Abdominal section for puerperal septicemia, 493.

Bangs, L. B. The treatment of prostatic enlargement, 186; tuberculosis and neoplasms of the bladder, surgery or hygiene? 399.

Barye, M. H. A persevering therapeutist, 383.

Beards. Should doctors wear beards? Colby, F. A., 607.

Benedict, A. L. The treatment of typhoid fever by intestinal asepsis, 204.

Bibber, R. D. A unique case of apoplexy, 193.

Bibliography. Attfield, J., chemistry, general, medical and pharmaceutical, including the chemistry of the U. S. pharmacopœia, 246; Bra, M., la méthode Brown-Sequard, traité de histothérapie, 601; Bracken, H. M., outline of materia medica and pharmacology, 601; Brissaud, E., Leçons sur les maladies nerveuses, 599; Cheever, D. W., lectures on surgery, 349; Cooper, A., syphilis, 523; Curtis, E., manual of general medical technology, including prescription writing, 301; DaCosta, J. C., a manual of modern surgery, general and operative, 273; Dench, E. B., diseases of the ear, 524; Fenwick, H., urinary surgery, 245; Fowler, G. R., a treatise on appendicitis, 70; Gowers, W. R., the dynamics of life, 169; Gray, L. C., a treatise on nervous and mental diseases, 600; Griffith, J. P. C., the care of the baby, 522; Hare, H. A., a text-book of practical therapeutics, 473; Hayem, G., physical and natural therapeutics, 524; Hertwig, O., the cell, 629; Hoag, E. B., and Kahn, H., elementary technique in histology and bacteriology, 630; Index medicus, 579; Jackson, E., skiascopy, and its practical application to the study of refraction, 600; Kaposi, M., pathology and treatment of diseases of the skin, 497; King, A. F. A., a manual of obstetrics, 601; Leonard, C. H., the pocket materia medica and therapeutics, 401; Lindsay and Blakiston's physicians' visiting-list for 1896, 550; Losch, H., a German-English medical thesaurus, or treasure of single and compound medical words and terms, 550; Maisch, J. M., a manual of organic materia medica, 497; Massachusetts General Hospital annual report, 142; medical news visiting-list for 1896, 497; medical record visiting-list and physicians' diary for 1896, 601; Mitchell, J. K., remote consequences of injuries of nerves and their treatment, 599; Moullin, C. W. M., enlargement of the prostate: its treatment and radical cure, 244; Parvin, T., the science and art of obstetrics, 601; Politzer's text-book of the diseases of the ear and adjacent organs, 524; Purdy, C. W., practical urinalysis and urinary diagnoses, 274; Pye-Smith, P. H., Lumleian lectures on certain points in the ætiology of disease, and Harveian oration, 524; Roberts, J. B., modern medicine and homeopathy, 600; Robb, H., aseptic surgical technique, 70; Roosa, D. B. St. J., a clinical manual of diseases of the eye, including a sketch of its anatomy, 472; Rotch, T. M., pediatrics, 572; Roth, O., modern materia medica, 550; Sachs, B., a treatise on the nervous diseases of childhood, for physicians and students, 496; Schimmelbusch, C., a guide to the aseptic treatment of wounds, 601; Simon, W., manual of chemistry, 274; Snell, S., eyesight and school life, 524; Satler, S. P., and Trimble, H., a text-book of chemistry, 523; Shoemaker, J. V., materia medica and therapeutics, 630; Shuttleworth, G. E., mentally-deficient children, their treatment and training, 600; Spalteholz, V. W., Handatlas der Anatomie der Menschen, 630; Stedman, T. L., twentieth century practice, 478, 629; Tillmanns, H., and Tilton, B., principles of surgery and surgical pathology, 246; Thompson, W. G., practical dietetics, with special reference to diet in disease, 523; Voswinkel, B. M., surgical nursing, 630; Webster, J. C., ectopic pregnancy, its etiology, classification, embryology, diagnosis and treatment, 245; Williams, W. R., a monograph on diseases of the breast, their pathology and treatment, with special reference to cancer, 169; Wyllie, J., the disorders of speech, 21, Year-book of treatment for 1895, 401.

Bicycle and medical practice, 121.

Billings, J. S. Banquet and presentation in honor of John S. Billings, M.D., 606.

Bills. The Dean of Norwich on doctors' bills, 306.

Biography. Adams, B. F. D., 480; Asiaro, G. 251; Bardeleben, A. von, 356; Battey, R., 504; Betts, W. A., 172; Bristowe, J., 252; Burnette, E. W., 354, 381; Carpenter, J. B., 477; Chandler, T. H., 280; Cobb, M. B., 195; Conrad, H. B., 453; Cushing, B., 454; Dickerman, L., 308; Eddy, H. M., 605; Eveleth, J. M., 195; Fish, D. B. N., 480; Gorgas, A. C., 52; Hastings, J. W., 356; Hoppe-Seyler, F., 280; Hunt, H. H., 195; Huxley, T. H., 28; Jarvis, W. C., 145; Knapp, G. L., 605; Longmore, T., 456; Loomis, A. L., 213; Lyon, D. S., 306; Mackie, B. S., 176; Mursick, G. A., 428; Osgood, W., 195; Pasteur, L., 350, 356, 529; Pemberton, J. P., 500; Perkins, F. C., 195; Pohle, J. G., 406; Porcher, F. P., 580; Rodrigues, E., 144; Schimmelbusch, K., 224; Smith, G. H., 97; Soule, H. S., 384; Teixeira, J. M., 144; Toward, J. W., 195; Verneuil, 28; Whitney, E. J., 172; Wilbur, J. G., 332; Williams, H. W., 27; Zabriskie, J. L., 528.

Birge, W. S. A case of criminal abortion with peculiar features, 412, 424.

Births. An act to regulate the registration of births in Rhode Island, 50.

Blake, C. J. Report on otology, 467.

Blake, J. G. Cases of interest from the summer gynecological service at the Boston City Hospital, 585, 598.

Blodgett, A. N. Carcinoma of the cardiac end of the stomach, 389, 414.

Bone. The deformities and malformations resulting from acute infections in bone, Park, R., 448.

Booth, J. A. Hysterical amblyopia and amaurosis, report of five cases treated by hypnotism, 324.

Bosworth. Melancholia cured by intra-nasal operation, 300; suppurative ethmoid disease followed by invasion of the sphenoidal sinus, abscess of the brain and death, 300.

Bow Legs. Peckham, F. E., 317.

Bowen, J. T. Report on dermatology, 290; modern theories and treatment of eczema, 361; the epitrichial layer of the epidermis and its relationship to ichthyosis congenita, 569.

Bradford, E. H., and Brackett, E. G. The employment of mechanical force in treatment of lateral curvature, 357.

Brain. Palliative trephining in cerebral tumor, Albert, 123; the localization of lesions in the pons, Mills, C. K., 349; cortical localization in the light of recent researches into the minute anatomy of the cortex, Mills, C. K., 374; presentation of a brain tumor, Walton, G. L., 375.

Breast. Cancer of the breast, Wight, J. S., 92; diffuse hypertrophy of the breast, Anthony, F. W., 185.

Briggs, F. M. Two cases of cyst of the finger, 7.

Bromide eruptions, Jackson, 549.
Brull, W. An audible intra-uterine cry, 407.
Bryan, J. H. A further contribution to the study of suppurative disease of the accessory sinuses, 300.
Bryson, J. P. A tabulated report of 27 operations for prostatomyomectomy by the suprapubic route, with remarks, 420; a case of complete castration for prostatic overgrowth, observation for four months, 420.
Buffalo Bill and the sick children, 50.
Bullard, W. N. The diagnosis of pachymeningitis interna hemorrhagica, 461.
Burnett, E. C. A case of early obstruction of the ejaculatory ducts, 421.
Burr, C. B. The paranoiac a menace to society, 629.
Burrage, W. L. Notes on the repair of rupture of the perineum through the sphincter ani, 108.
Burrell, H. L. Ligature of the innominate artery, with the report of a case, 125.
Burrell, H. L., and Cushing, H. W. Recent progress in surgery, 344.
Cabot. A. T. The treatment of enlarged prostate, 149; a case of cancer of the urethra, 320, 422; suggestions in regard to the operation for the cure of inguinal and femoral hernia, 510; observations upon relapsing appendicitis, with a record of thirty-two operations without a death, 641.
Cale, G. W. Two successful operations for traumatic insanity, 626.
Cancer. Cancer of the lip, tongue, floor of mouth, and pharynx, Connor, P. S., 68; the operative treatment of cancer of the male genitals, McGuire, H., 69; cancer of the breast, Wight, J. S., 92; the modern operative treatment of rectal cancer, Gerster, A. G., 92; cancer, Frost, G. D., 215; a case of cancer of the urethra, Cabot, A. T., 320, 422; carcinoma of the cardiac end of the stomach, Blodgett, A. N., 389, 414; a case of cancer of the cerebellum, metastatic from the breast, death, autopsy, Garceau, E., 543; the present state of our knowledge of cancers and tumors, McGraw, T. A., 628.
Cantrell. Ulerythema sycosiform, 593.
Carstens, J. H. Three cases of hysterectomy following celiotomy for pus-tubes, 598.
Case, F. D. Diphtheria epidemic at Ashtabula, 146.
Casselberry. Electrolysis by a current controller for the reduction of spurs of the nasal septum, 299.
Castration. Castration of criminals, Milliken, M., 98; castration for hypertrophy of the prostate, Thayer, F. C., 182, 193; a case of complete castration for prostatic overgrowth, observation for four months, Bryson, J. P., 420.
Cataract Operations between the ages of eighty and ninety, with a table of cases, Derby, H., 319.
Catgut. Ligation of the pedicle with catgut, MacLaren, A., 471.
Catheter. The renal catheter and its use in the diagnosis and treatment of renal diseases, Kelly, H. A., 469.
Celiotomy. A method of preventing thirst following celiotomy, Humiston, W. H., 597; celiotomy in general suppurative peritonitis with the report of a case, Porter, M. F., 597; peritoneal irrigation and drainage, Cordier, A. H., 598; a new phase of celiotomy, Groner, F. G., 628.
Centenarian Surgeon. Giacomo Asiari, 251.
Cephalomegaly. Hyperostosis cranii (cephalomegaly) with illustrations, Putnam, J. J., 373.
Chadwick, H. D. The gonococcus, 337, 371.
Channing, W. The importance of frequent observations of temperature in the diagnosis of chronic tuberculosis, 609, 624.
Chapman, F. B. Septa vaginæ, two cases observed in private practice, 622.
Chemistry. Report on chemistry, Hills, W. B., 241.
Chenery, E. Saccharum album as an oxytocic, 635.
Cheney, F. E. A case of panophthalmitis, with perforation into the orbit, and symptoms suggesting septic infection, 139.
Children. A simple expedient for the treatment of nocturnal enuresis, 23; report on recent cases at the Infants' Hospital, Boston, Rotch, T. M., and Wentworth, A. H., 164; report on diseases of children, Rotch, T. M., and Wentworth, A. H., 589.
Chismore, G. Traumatic rupture of the urethra, restoration after thirty-six years, 423.
Cholera. A good fight against cholera in South America, 75; cholera in England in 1893, 95; the cerebral pathology of Asiatic cholera, 276; a substantiation of the water-borne theory of cholera, 354.
Chorea. A case of hereditary chorea, with autopsy, Dana, C. L., 376.
Cigarette Habit. Mulhall, J. C., 323.
Circulatory System. A case of spontaneous perforation of the heart, with obscure symptoms, Tanner, J. A., 62, 66; fatal case of traumatic aneurism of aberrant right subclavian artery, Smith, P., 74; ligature of the innominate artery, with the report of a case, Burrell, H. L., 125; report on thoracic diseases, Sears, G. G., 207; a case of traumatic cardiac neurosis, Mulhall, J. C., 211; a case of aneurism of the thoracic aorta, Crawford, S. M., 263; the pulse in insanity, original study of cases, Kellogg, T. H., 349; cardiac stimulants, Vickery, H. F., 395; endocarditis and intermittent fever, Dock, G., 457; an unusual case of aortic regurgitation, Vickery, H. F., 566.
Clark, J. P. The condition of the nose in phthisical patients, 342.
Cleveland, C. Alexander's operation, 471.
Coe, H. C. The value of gauze drainage, 521.
Coggin, D. Clinical notes of cataract patients, 645.
Colby, F. A. Should doctors wear beards? 607.
Connor, P. S. Cancer of the lip, tongue, floor of mouth, and pharynx, 68.
Constipation. Better than cannon-balls for constipation, Graham, D., 466.
Coolidge, A., Jr. Recent progress in laryngology, 545.
Cordier, A. H. Peritoneal irrigation and drainage, 598.
Cottage Hospitals. Wyman, M., 284, 313.
Councilman, W. T. The pathology of diphtheria, 231.
Covell, H. H. Is the handling of artificial fertilizers injurious to health? 99.
Cows. The inspection of milch cows in Rome, 354.
Craig Colony for epileptics, 381.
Crawford, S. M. A case of aneurism of the thoracic aorta, 263.
Criminals. The castration of criminals, Milliken, M., 98.
Cripps, E. C. Deaths under anesthetics, chloroform, 154.
Cry. The first cry, Olshausen, 407; an audible intra-uterine cry, Brüll, W., 407.
Cumston, C. G. Metritis as a cause of miscarriage, 201, 225, 253, 281.
Curette. The use and abuse of the curette, 248.
Cutler, E. G. Tapeworm, 623.
Daly, W. H. Relation of vaso-motor disturbances to diseases of the upper air-tract, 323.
Dana, C. L. A case of hereditary chorea, with autopsy, 376.
Dandridge, N. P. Hysteria in the male, 306.
Darlington, T., Jr. Two factors in the production of disease in New York City, 213.
Davenport, B. F. Report upon food, drugs and articles of domestic use, 264.
Davenport, F. H. Report on gynecology, 442.
Davis, E. P. The prophylaxis and treatment of puerperal eclampsia, 520.
Death. The proximate cause of senescence and death, why these are necessary, 198; the signs of death, 475.
Deaver, J. B. The influence of ether narcosis upon the genito-urinary tract, 94
Derby, H. Cataract operations between the ages of eighty and ninety, with a table of cases, 319.
Dercum, F. X. Two cases of "railway spine," with autopsy. 346.
Dermatology. Report on dermatology, Bowen, J. T., 290; acne and the seborrheic condition, 328; modern theories and treatment of eczema, Bowen, J. T., 361; the study of dermatology in Europe, White, C. J., 478, 501, 529, 554, 577; lupus erythematosus treated internally with phosphorus, Jenckes, H. L., 544; president's address before the American Dermatological Association, Sherwell, S., 547; lupus erythematosus disseminatus, Fordyce, 547; Raynaud's disease of the ears, Fordyce, 547; angiokeratoma of the scrotum, Fordyce, 548; hydroa estivale, 548; bromide eruptions, Jackson, 549; an etiological puzzle, White, J. C., 557; the epitrichial layer of the epidermis and its relationship to ichthyosis congenita, Bowen, J. T., 569; a unique case of agminate folliculitis of parasitic origin, Hartzell, M. B., 570; a contribution to the study of mycetoma, Hyde, J. N., 571; notes on drug eruptions, Fordyce, J. A., 571; a remarkable drug eruption, Shepherd, F. J., 572; syphilitic warts, Free, J. E., 584; urticaria pigmentosa, a case twenty years under observation, Morrow, A. P.; 592; statistical report on skin cases, Hyde, 593; ulerythema sycosiform, Cantrell, 593; erysipelas, Allen, 593; the value and limits of electrolysis in dermatology, Zeisler, 593.
De Schweinitz, G. E. Recurrent oculo-motor palsy with a case, 341.
Devine, W. H. Fatal case of acute alcoholic poisoning in a child, 545.
Diabetes. The treatment of diabetes, 218.
Digestive System. A case of acute intestinal obstruction from the impaction of an enterolith; operation; death, Richardson, M. H., 15; on the direct faradization of the mucous membranes of the stomach and the intestines in animals — dogs, cats and rabbits, Meltzer, S. J., 21; discussion on the operation for the radical cure of hernia, 45; the modern operative treatment of rectal cancer, Gerster, A. G., 92; congenital esophageal pouch, excision, immediate suture of esophagus, recovery, Mixter, S. J., 116; a report on one hundred and three operations on the stomach, Miculicz, 122; laparotomy for one hundred and twenty cherry-stones and seventy prune stones in the sigmoid flexure, Homans, J., 164; the treatment of diabetes, 218; carcinoma of the cardiac end of the stomach, Blodgett, A. N., 389, 414; better than cannon-balls for constipation, Graham, D., 466; chronic intestinal obstruction, colotomy, Warren, J. C., 531; a case of fatal diarrhea (cholera) due to ascarides, Mitra, N. C., 567; a case of penetrating wound of the abdomen and large intestine, Thayer, F. C., 588; tubercular peritonitis, Dunning, L. H., 596; the diagnosis of salivary calculus, Lindemann, 606; tapeworm, Cutler, E. G., 623; surgical treatment of hemorrhoids, Marcy, H. O., 628; observations upon relapsing appendicitis, with a record of thirty-two operations without a death, Cabot, A. T., 641.
Diphtheria. Diphtheria epidemic at Ashtabula, Case, F. D., 146; two cases of diphtheria successfully treated by antitoxin, Phelps, J. S., 184; on bacteriological diagnosis of diphtheria, Emerson, H. C., 216; the etiology of diphtheria and the use of antitoxin, Ernst, H. C., 228; the pathology of diphtheria, Councilman, W. T., 231; the preparation of diphtheria antitoxin, Goodale, J. L., 235; diphtheria and the antitoxin treatment, Robie, W. F., 238; results of the antitoxin treatment of diphtheria in Germany, 251; the clinical use of diphtheria antitoxin, Park, W. H., 255; antitoxin in diphtheria, Withington, C. F., 260; antitoxin in diphtheria, Sears, G. G., 261; diphtheria antitoxin at the Newton Hospital, Winslow, K., 503; the bacteriological examinations of nine autopsies on cases of diphtheria treated with antitoxin, Stokes, W. R., 581; a doubter on sero-therapy in diphtheria, 633.
Dispensary. Boston Dispensary, 406.
Dock, G. Goitre in Michigan, 20; address at meeting of the Harvard Medical Alumni Association, 271; endocarditis and intermittent fever, 457.
Douglas, O. B. Some methods of treating diseases of the nose and throat, 217.
Drowning. The post-mortem signs of drowning, Hough, G. de N., 409, 423, 436; resuscitation after submersion, 551; resuscitation after submersion, Hunt, H., 555; resuscitation after submerging, Morrill, F. G., 579; death by submersion, Morgan, E. L., 579.
Drugs. Report on food, drugs and articles of domestic use, Davenport, B. F., 264; on drug eruptions, Fordyce, J. A., 571; a remarkable drug eruption, Shepherd, F. J., 572.
Dunning, L. H. Tubercular peritonitis, 596.
Dwight, T. Dr. Roswell Park's speech before the Harvard Medical Alumni, 331; recent progress in anatomy, 492.
Ear. Report on otology, Blake, C. J., 467; exploration of the lateral sinus, Green, J. O., 505.
Eczema. The theories and treatment of modern eczema, Bowen, J. T., 361.
Edes, R. T. The New England Invalid, 53, 77, 101.
Editorials. Recent experiments on the parasites of malaria, 22; a simple expedient for the treatment of nocturnal enuresis, 23; evolu-

tion of the physician and surgeon, 24; the last sickness of Napoleon Bonaparte, 47; the treatment of exophthalmic goitre by the administration of thymus gland, 48; malaria, 71; partial amputation of the foot, 72; concerning vivisection, 72; cholera in England in 1893, 95; a training-school for nurse attendants, 96; recent accidents from antitoxin, 119; cerebro-spinal meningitis in an infant, 120; annual report of the Massachusetts General Hospital, 142; microbe ferments of the soil, 143; a judicious valedictory address, 170; the action of small-bore projectiles of high velocity on the human body, 170; the proximate cause of senescence and death, why these are necessary, 185; over-operating in gynecology, 197; the treatment of diabetes, 218; the military effectiveness of the modern small-bore projectiles, 219; floating bodies in joints, 246; the use and abuse of the curette, 248; the infectious myelites, 274; the cerebral pathology of Asiatic cholera, 276; experimental degenerations following unilateral lesions of the cortex cerebri in the monkey, 302; the influenza bacillus and abscess of the lung, 304; the law of commitment of the insane, 326; acne and the seborrheic condition, 328; Professor Louis Pasteur, 350; the dangers of Murphy's button, 351; lesions produced by the action of certain poisons on the nerve-cells, 378; syphilis as described and treated by the Chinese, 402; thyroidismus, 403; on the transmission of scarlet fever by the intermediation of a letter, 403; total extirpation of the epiglottis by sub-hyoidean pharyngotomy, 426; a medical view of the miracles at Lourdes, 450; reorganization of medical boards in the New York City Hospitals, 452; permanganate of potash as an antidote for morphine poisoning, 474; the signs of death, 475; the symbol of medicine, 498; the lungs of one of Koch's earliest tuberculin patients, 498; the economics of prostitution, 525; the case of Miss Lanchester, 526; our corpulent policemen, 527; the present status of sero-therapy, 550; resuscitation after submersion, 551; diagnosis of malarial fevers by organisms in the blood, 574; the buried tendon suture, 574; psychical research and Eusapia Palladino, 602; treatment of morphinomania, 602; the William Pepper laboratory of clinical medicine, 603; a bill to establish a board of expert medical witnesses, 604; the physical effects of pain, 631; traumatism as a cause of tubercular meningitis, 632; a doubter on sero-therapy in diphtheria, 633; annus medicus, MDCCCXCV, 650.

Education. A degree in State medicine, 26; brilliant results of physiological teaching, 27; the Harvard Summer School of Physical Training, 147; lengthening of the medical course, 173; report of the committee on the Harvard Medical School, 266; Bellevue Hospital, 278; too much high pressure at school, Graham, D., 454; the William Pepper laboratory of clinical medicine, 603.

Elbow. The treatment of elbow-joint fractures in the position of acute flexion, without splints, with report of cases, Smith, H. L., 1, 14.

Electricity. On electricity in the hands of the general practitioner, Saltmarsh, G. H., 215; electrotherapy as a means of diagnosis in gynecology, Apostoli, 382; the value and limits of electrolysis in dermatology, Zeisler, 593.

Eliot, C. W. Address before Harvard Medical Alumni Association, 141.

Elliot, J. W. Immediate suture of the gall-ducts and the gall-bladder after extraction of stones, with cases, 116.

Ellis, F. W. The reports of members of the Massachusetts Medical Society, 198; rapid increase of opacity in senile cataracts, 565.

Emerson, H. C. On bacteriological diagnosis of diphtheria, 216.

Emmet, T. A. The use of traction and morcellation in the removal of fibroids *vs.* hysterectomy, 469.

Endocarditis and intermittent fever, Dock, G., 457.

Engelmann. Address before Harvard Medical Alumni Association, 294.

Enterolith. A case of acute intestinal obstruction from the impaction of an enterolith; operation; death, Richardson, M. H., 15.

Epiglottis. Total extirpation of the epiglottis by sub-hyoidean pharyngotomy, 426.

Epilepsy. Craig Colony for epileptics, 381.

Ernst, H. C. The etiology of diphtheria and the use of antitoxin, 228.

Esophagus. Congenital esophageal pouch, excision, immediate suture of esophagus, recovery, Mixter, S. J., 116.

Ether. The present status of anesthesia, Gay, G. W., 93; influence of ether upon the kidney, Wier, R. F., 93.

Etheridge, J. H. Renal insufficiency in gynecological cases, 494.

Ethics. Revision of the code of ethics of the Maine Medical Association, 191.

Ethmoid. Suppurative ethmoid disease, followed by invasion of the sphenoidal sinus, abscess of the brain and death, Bosworth, 300.

Eusapia Palladino. Psychical research and Eusapia Palladino, 602.

Expert Witnesses. A bill to establish a board of expert medical witnesses, 604.

Extra-uterine Pregnancy. Three cases of extra-uterine pregnancy, Johnson, F. W., 464; a case of extra-uterine pregnancy, Richardson, M. H., 599; a case of extra-uterine pregnancy, Worcester, A., 599.

Eye. Congenital ankyloblepharon, 14; exhibition of a case of albuminuric retinitis consequent upon an attack of purpura hemorhagica rheumatica, Prentiss, 17; a case of ophthalmoplegia externa, bilateral, complete, Jack, E. E., 64, 67; a case of panophthalmitis with perforation into the orbit and symptoms suggesting septic infection, Cheney, F. E., 139; cataract operations between the ages of eighty and ninety, with a table of cases, Derby, H., 319; hysterical amblyopia and amaurosis, report of five cases treated by hypnotism, Booth, J. A., 324; recurrent oculo-motor palsy with a case, De Schweinitz, G. E., 341; sarcoma of the choriod, Parker, W. A., 491; rapid increase of opacity in senile cataracts, Ellis, F. W., 565; clinical notes of cataract patients, Coggin, D., 645; recent progress in ophthalmology, Standish, M., 646.

Faith healing or suicide, 222.

Faradization. On the direct faradization of the mucous membranes of the stomach and the intestines in animals — dogs, cats and rabbits, Meltzer, S. J., 21.

Farlow, J. W. Two cases of lipoma, 299; some remarks on removal of the tonsils, 299.

Fertilizers. Is the handling of artificial fertilizers injurious to health? Covell, H. H., 99.

Fever. A comfortable way of using cold in fevers, Williams, F. H., 20.

Fibroids. Warren, J. C., 536.

Finger. Two cases of cyst of the finger, Briggs, F. M., 7.

Flat-foot, Lovett, R. W., and Dane, J., 445; a study of the weak foot with reference to its causes, its diagnosis and its cure, with an analysis of one thousand cases of so-called flat-foot, Whitman, R., 447.

Floating bodies in joints, 246.

Floating Hospital. Needs of the Boston Floating Hospital, 173.

Food. Nourishment by subcutaneous injection, 198; report upon food, drugs and articles of domestic use, Davenport, B. F., 264; the modified milk question, Worcester, A., 287; the inspection of milch cows in Rome, 354.

Foot. A case of madura foot disease (mycetoma pedis), Adami, J. G., 18; partial amputation of the foot, 72; flat-foot, Lovett, R. W., and Dane, J., 445; removal of the astragalus for talipes valgus, Moore, J. E., 446; a study of the weak foot with reference to its causes, its diagnosis and its cure, with an analysis of one thousand cases of so-called flat-foot, Whitman, R., 447.

Football. An early expression of the need of revising the rules of football, 553.

Ford, W. E. The ultimate results of trachelorrhaphy, 520.

Fordyce. Lupus erythematosus disseminatus, 547; Raynaud's disease of the ears, 547; angiokeratoma of the scrotum, 548; notes on drug eruptions, 571.

Fractures. The treatment of elbow-joint fractures in the position of extreme flexion without splints, with report of cases, Smith, H. L., 1, 14; Hennequin's method of treating fractures of the thigh, King, A., 194.

Free, J. E. Syphilitic warts, 584.

Frost, G. D. Cancer, 215.

Fuller, E. Remarks on the seminal vesicles, 419; six successful and successive cases of prostatectomy, 420; how to diagnosticate sexual derangements in the male, 627.

Fussel, M. H. Carcinoma of the liver with cirrhosis, 20.

Gall-Bladder. Immediate suture of the gall-ducts and the gall-bladder after extraction of stones, Elliot, J. W., 116; a case of cholecystectomy, Weeks, S. H., 118.

Garceau, E. New instruments, 444; a case of trichinosis, death, autopsy, 512; a case of cancer of the cerebellum, metastatic from the breast, death, autopsy, 543; pulmonary infarction, 620.

Gauze. The value of gauze drainage, Coe, H. C., 521.

Gay, G. W. The present status of anesthesia, 93; circumstances under which chloroform is preferable to ether as an anesthetic, 433.

Generative System. Result of treatment of hypertrophy of the prostate, White, J. W., 45, 67, 420; the operative treatment of cancer of the male genitals, McGuire, H., 69; notes on the repair of rupture of the perineum through the sphincter ani, Burrage, W. L., 106; the treatment of enlarged prostate, Cabot, A. T., 149; the operative treatment of prostatic hypertrophy, Watson, F. S., 154; castration for hypertrophy of the prostate, Thayer, F. C., 182; vaginal hysterectomy, Oakes, W. K., 193; pyosalpinx, Thompson, J. F., 193; over-operating in gynecology, 197; metritis as a cause of miscarriage, Cumston, C. G., 201, 225; report of the first cases of celiotomy at the Boston Baptist Hospital, Kaan, G. W., 207; a case of cancer of the urethra, Cabot, Arthur T., 320, 422; electrotherapy as a means of diagnosis in gynecology, Apostoli, 382; remarks on the operative treatment of strictures of the deep urethra, Thorndike, P., 417, 422; the infiltration method of local anesthesia in genito-urinary surgery, Lewis, B., 419; remarks on the seminal vesicles, Fuller, E., 419; three cases of epithelioma of the penis, Wishard, W. N., 419; a tabulated report of 27 operations for prostatomyomectomy by the suprapubic route, with remarks, Bryson, J. P., 420; six successful and successive cases of prostatectomy, Fuller, E., 420; a case of complete castration for prostatic overgrowth, observation for four months, Bryson, J. P., 420; a case of early obstruction of the ejaculatory ducts, Burnett, E. C., 421; traumatic rupture of the urethra, restoration after thirty-six years, Chismore, G., 423; report on gynecology, Davenport, F. H., 442; one thousand major gynecological operations, Schauta, 453; further experience and observations in hysterectomy for fibroids, Gordon, S. C., 469; the use of traction and morcellation in the removal of fibroids *vs.* hysterectomy, Emmet, T. A., 469; ligation of the pedicle with catgut, MacLaren, A., 471; the present treatment of uterine displacement, Mundé, P. F., 471; experience with ventro-fixation and Alexander's operation, Smith, A. L., 471; Alexander's operation, Cleveland, C., 471; abdominal section for puerperal septicemia, Baldy, J. M., 493; the relations of lithemia to diseases of the pelvic organs in women, Mann, M. D., 494; renal insufficiency in gynecological cases, Etheridge, J. M., 494; indications for total castration of the vagina, Jacobs, C., 495; vaginal hysterectomy for uterine myomata and diseases of the adnexa, Wathan, W. H., 495; conservative surgical treatment of para- and peri-uterine septic diseases, Henrotin, F., 495; specimens removed by vaginal and abdominal hysterectomy, Sutton, R. S., 518; a few cases of true pelvic cellulitis, a plea for more thorough pelvic surgery, Van de Warker, E., 520; the prevention of uterine disease due to child-bearing, Wylie, W. G., 520; perforation of the uterus, Warren, J. C., 536; four months' hospital work in abdominal surgery, Johnson, F. W., 539, 561; pyosalpinx, Warren, J. C., 557; a brief *résumé* of the indications for hysterectomy, Tuttle A. H., 559; recent progress in genito-urinary surgery, Watson, F. S., 567; cases of interest from the summer gynecological service at the Boston City Hospital, Blake, J. G., 585, 598; a case of spontaneous rupture of the uterus, Townsend, C. W., 589, 599; uterine fibroids, when to operate, Gilliam, D. T., 596; hysterectomy for puerperal sepsis, when shall it be performed? with a report of four cases, Holmes, B., 596; three cases of hysterectomy following celiotomy for pus-tubes, Carstens, J. H., 598; a large uterine fibroid complicated by stone in the bladder, abdominal hysterectomy and litholapaxy, recovery, Richardson, M. H., 619; how to diagnosticate sexual derangements in the male, Fuller, E., 627; septa vaginæ, two cases observed in private practice, Chapman, F. B., 622.

Gerrish, F. H. The relations of the lymphatic system to the various regions, 68.

Gerster, A. G. The modern operative treatment of rectal cancer, 92.

Gilliam, D. T. Uterine fibroids, when to operate, 596.

Goitre in Michigan, Dock, G., 20; the treatment of exophthalmic goitre by the administration of thymus gland, 48; the etiology of goitre, Morris, H. C. L., 122; modern views of the nature and treatment of exophthalmic goitre, Putnam, J. J., 131; dessicated thyroids in goitre, Ingals, E. F., 298.

Gold combinations as alteratives, Stucky, T. H., 595.

Goldthwait, J. E. Tendon transplantation in the treatment of deformities resulting from infantile paralysis, 447; a case of acute osteo-arthritis involving the whole cervical region of the spine, in a woman nearly sixty years of age, with recovery, 644.

Goldthwaite, S. V. Pyelo-nephritis; nephrectomy; recovery, 86, 90.

Gonococcus, Chadwick, H. D., 337, 371.

Gonorrhea. Gonorrheal arthritis, clinical observations, Northrup, W. P., 18; gonorrhea in the female, Taylor, R. W., 401.

Goodale, J. L. The preparation of diphtheria antitoxin, 235.

Goodhue, D. P. Address before New Hampshire Medical Society, 217.

Gordon, S. C. Further experience and observations in hysterectomy for fibroids, 469.

Gould, P. The recent evolution of surgery, 429.

Graham, D. Too much high pressure at school, 454; better than cannon balls for constipation, 466.

Graham, J. E. Displacements of the liver, 20.

Graves's Disease. Modern views of the nature and treatment of exophthalmic goitre, Putnam, J. J., 131.

Green, J. Address before Harvard Medical Alumni Association, 295.

Green, J. O. Exploration of the lateral sinus, 505.

Griffiths, G. W. The hair turning from white to black after exposure to severe cold, 634.

Groner, F. G. A new phase of celiotomy, 628.

Guiteras, J. Some observations on the spleen and marrow in leukemia, 20.

Gunshot Wounds. A bullet discharged from the body after twenty-four years, 26; the action of small-bore projectiles of high velocity on the human body, 170; the military effectiveness of the modern small-bore projectiles, 219; a study of gunshot wounds with reference to the proximity of the weapon at the time of firing, Hall, J. N., 484.

Gynecology. Over-operating in gynecology, 197; the use and abuse of the curette, 248; electrotherapy as a means of diagnosis in gynecology, Apostoli, 382; report on gynecology, Davenport, F. H., 442; one thousand major gynecological operations, Schauta, 453; further experience and observations in hysterectomy for fibroids, Gordon, S. C., 469; the use of traction and morcellation in the removal of fibroids *vs.* hysterectomy, Emmet, T. A., 469; ligation of the pedicle with catgut, MacLaren, A., 471; the present treatment of uterine displacement, Mundé, P. F., 471; experience with ventro-fixation and Alexander's operation, Smith, A. L., 471; Alexander's operation, Cleveland C., 471; abdominal section for puerperal septicemia, Baldy, J. M., 493; the relations of lithemia to diseases of the pelvic organs in women, Mann, M. D., 494; renal insufficiency in gynecological cases, Etheridge, J. H., 494; indications for total castration by the vagina, Jacobs, C., 495; vaginal hysterectomy for uterine myomata and diseases of the adnexa, Wathen, W. H., 495; conservative surgical treatment of para- and peri-uterine septic diseases, Henrotin, F., 495; specimens removed by vaginal and abdominal hysterectomy, Sutton, R. S., 518; a few cases of true pelvic cellulitis, a plea for more thorough pelvic surgery, Van de Warker, E., 520; the prevention of uterine disease due to child-bearing, Wylie, W. G., 520; the value of gauze drainage, Coe, H. C., 521; cases of interest from the summer gynecological service at the Boston City Hospital, Blake, J. G., 585, 598.

Hair turning from white to black after exposure to severe cold, Griffiths, G. W., 634.

Hall, J. N. A study of gunshot wounds with reference to the proximity of the weapon at the time of firing, 484.

Hall, W. D. Congenital ankyloblepharon, 14.

Hankin. A substantiation of the water-borne theory of cholera, 354.

Harrington, A. H. The legislative provisions for insane criminals in Massachusetts, 481.

Harrington, M. W. Sunshine statistics, 211.

Hart, W. F. Neurasthenia, 193.

Hartzell, M. B. A unique case of agminate folliculitis of parasitic origin, 570.

Harvard Summer School of Physical Training, 147.

Hayden, J. R. Iodoform ointment injections in the treatment of suppurative adenitis of the groin, 418.

Hemorrhoids. Surgical treatment of hemorrhoids, Marey, H. O., 628.

Henrotin, F. Conservative surgical treatment of para- and peri-uterine septic diseases, 495.

Heredity. The influence of heredity upon the progress of phthisis, Solly, S. E., 212.

Hermaphroditism. A case of apparent hermaphroditism, Minot, F., 112, 116.

Hernia. The operation for the radical cure of hernia, 45; radical cure of hernia, Warren, J. C., 509; suggestions in regard to the operation for the cure of inguinal and femoral hernia, Cabot, A. T., 510; imbrication or lap-joint method, a plastic operation for hernia, Andrews, E. W., 627; further observations on the radical cure of rupture by the intrapelvic method, with illustrative cases, Reed, C. A. L., 627.

Hilton, J. F. Cerebral embolism, 193.

Hills, W. B. Report on chemistry, 241.

Hinsdale, G. Recent measures for the prevention and treatment of tuberculosis, 210.

Hoadley, A. E. A new spine brace, 448.

Holmes, B. Hysterectomy for puerperal sepsis, when shall it be performed? with a report of four cases, 596.

Homans, J. Three unusual surgical cases: stone in bladder of a girl of five years, nucleus a pin; removal of a brass safety-pin from the right primary bronchus; colotomy and removal of one hundred and twenty cherry-stones and seventy prune stones in the sigmoid flexure, 164; specimens, 169.

Homeopathy. A new application of homeopathy, 355.

Hospitals. Bellevue Hospital, 278; hospital broken up by a mob, 278; cottage hospitals, Wyman, M., 284, 313; reorganization of medical boards in the New York City Hospitals, 452.

Hough, G. de N. The post-mortem signs of drowning, 409, 423, 436.

Humiston, W. H. A method of preventing thirst following celiotomy, 597.

Hunt, H. Resuscitation after submersion, 555.

Hyde, J. N. A contribution to the study of mycetoma, 571; statistical report on skin cases, 593.

Hydroa estivale, Graham, 518.

Hygiene, Health and Boards of Health. International conference regarding the sanitary administration of railways and navigation, 146.

Hyperemia. On the consequences of hyperemia and the pathology of inflammation and suppuration, Park, R., 117.

Hyperthermy. A case of hyperthermy, Jacobi, A., 19.

Hypnotism. The treatment of sclerosis, of various forms of paralysis and other nervous derangements by suggestion, Osgood, H., 32, 40; hysterical amblyopia and amaurosis, report of five cases treated by hypnotism, Booth, J. A., 324.

Hysterectomy. A brief *résumé* of the indications for hysterectomy, Tuttle, A. H., 559.

Hysteria. Hysteria in the male, Dandridge, N. P., 306; hysterical amblyopia and amaurosis, report of five cases treated by hypnotism, Booth, J. A., 324; a case of total hysterical anesthesia in the male, Preston, G. J., 325.

Immunity and cure, Abbot, E. S., 613.

Index Medicus. Subscription to the *Index Medicus*, 223; revival of the *Index Medicus*, Roberts, J. B., 407.

Influenza bacillus and abscess of the lung, 304.

Ingals, E. F. Desiccated thyroids in goitre, 298.

Insane. The law of commitment of the insane, 326; legislative provisions for insane criminals in Massachusetts, Harrington, A. H., 481.

Insanity. Statistics concerning insanity, 151, 167; two successful operations for traumatic insanity, Cale, G. W., 626.

Instruments and Apparatus. The use and abuse of the curette, 248; new instruments, Garceau, E., 444; a new spine brace, Hoadley, A. E., 448; a new surgical saw, Skeer, J. D., 449.

Intermittent Fever. Endocarditis and intermittent fever, Dock, G., 457.

Invalid. The New England invalid, Edes, R. T., 53, 77, 101; modern female invalidism, Jacobi, M. P., 174.

Jack, E. E. A case of ophthalmoplegia externa, bilateral, complete, 64, 67.

Jackson. Bromide eruptions, 549.

Jackson, H. Case of syphilis, 633.

Jacobi, A. A case of hyperthermy, 19.

Jacobi, M. P. The needs and shortcomings of women physicians, 146; modern female invalidism, 174.

Jacobs, C. Indications for total castration by the vagina, 495.

Jenckes, H. L. Lupus erythematosus treated internally with phosphorus, 544.

Johnson, F. W. Three cases of extra-uterine pregnancy, 464; four months' hospital work in abdominal surgery, 539, 561.

Joints. Gonorrheal arthritis, clinical observations; Northrup, W. P., 18; tubercular disease of the knee-joint, Weeks, S. H., 194; floating bodies in joints, 246, the use of dry heat of high temperature in the treatment of joint diseases, Wirt, W. E., 627.

Jurisprudence. Prostitution, Stone, A. K., 29, 42; the castration of criminals, Milliken, M., 98; faith-healing or suicide, 222; the post-mortem signs of drowning, Hough, G. de N., 409, 423; a case of criminal abortion with peculiar features, Birge, W. S., 412, 421; an unusual cranial fracture, Pinkham, J. G., 425; the signs of death, 475; a study of gunshot wounds with reference to the proximity of the weapon at the time of firing, Hall, J. N., 484.

Kaan, G. W. Report of the first cases of celiotomy at the Boston Baptist Hospital, 207.

Keefe, D. E. Studies in anesthesia and anesthetics, 533.

Kellogg, T. H. The pulse in insanity, original study of cases, 349.

Kelly, H. A. The renal catheter and its use in the diagnosis and treatment of renal diseases, 469.

Keyes, E. L. The treatment of prostatic hypertrophy, 188.

Kilroy, P. The diagnosis of malaria from the presence of parasites in the blood, 137.

King, A. Hennequin's method of treating fractures of thigh, 194.

Knee. Tubercular disease of the knee-joint, Weeks, S. H., 194; excision of the knee as an orthopedic procedure, Plimpton, W. O., 419.

Krauss, W. C. Report of a case of peroneal muscular atrophy, with autopsy, 377.

Lanchester. The case of Miss Lanchester, 526.

Lane, E. B. Statistics concerning insanity, 161, 167.

Lannelongue. A curious anomaly, 331.

Laparotomy. Three cases of laparotomy for penetrating wounds of the abdomen, Scudder, C. L., 85, 87.

Larynx. Recent progress in laryngology, Coolidge, A., Jr., 545.

Leffingwell, A. Another word concerning vivisection, 147.

Legislation. Medical men and medical legislation, 330.

Leube. Nourishment by subcutaneous injection, 198.

Leukemia. Some observations on the spleen and marrow in leukemia, Guiteras, J., 20.

Lewis, B. The infiltration method of local anesthesia in genito-urinary surgery, 419.

Lindemann. The diagnosis of salivary calculus, 606.

Lions and lavender water, 634.

Lipoma. Two cases of lipoma, 299.

Liver. Displacements of the liver, Graham, J. E., 20; carcinoma of the liver with cirrhosis, Fussell, M. H., 20.

Localization of lesions in the pons, Mills, C. K., 349; cortical localization in the light of recent researches into the minute anatomy of the cortex, Mills, C. K., 374.

Lourdes. A medical view of the miracles at Lourdes, 450.

Lovett, R. W. Ambulatory treatment of Pott's disease, 448.

Lovett, R. W., and Dane, J. Flat-foot, 445.

Ludwig's Angina. Newcomb, J. E., 301.

Lungs of one of Koch's earliest tuberculin patients, 498.

Lupus erythematosus treated internally with phosphorus, Jenckes, H. L., 544.

Lymphatic System. The relation of the lymphatic system to the various regions, Gerrish, F. H., 68.
MacLaren, A. Ligation of the pedicle with catgut, 471.
McCurdy, S. L. Congenital absence of radii, with operation, 446.
McGraw, T. A. The present state of our knowledge of cancers and tumors, 628.
McGuire, H. The operative treatment of cancer of the male genitals, 69.
McNaught, J. Hemorrhage after tooth extraction, 173.
McPhail, D. A family tendency to twins, 635.
Madura. A case of madura foot disease (mycetoma pedis), Adami, J. G., 18.
Malaria. Recent experiments on the parasites of malaria, 22; malaria, 71; the diagnosis of malaria from the presence of parasites in the blood, Kilroy, P., 137; some observations which appear to establish the aerial transportation of malarial germs, Newton, R. C., 212; the diagnosis of malarial fevers by organisms in the blood, 574.
Mann, M. D. The relations of lithemia to diseases of the pelvic organs in women, 494.
Marcy, H. O. Personal service as the especial exponent of a great profession, 309; surgical treatment of hemorrhoids, 628.
Massachusetts Medical Society. The rights of members, Ellis, F. W., 198; pamphlets relating to the Massachusetts Medical Society wanted, Forster, E. J., 555; new catalogue of the Massachusetts Medical Society, Forster, E. J., 555.
Materia Medica and Therapeutics. A comfortable way of using cold in fevers, Williams, F. H., 20; report on therapeutics, Williams, F. H., 37; the treatment of exophthalmic goitre by the administration of thymus gland, 48; the present status of anesthesia, Gay, G. W., 93; influence of ether upon the kidneys, Weir, R. F., 93; the influence of ether narcosis upon the genito-urinary tract, Deaver, J. B., 94; popular therapeutics at the beginning of the eighteenth century, Mitchell, D., 97; recent accidents from antitoxin, 119; on the immunizing and curative effect of antitoxic blood-serum of the sheep in typhoid intoxication, Peifer, 146; sulphonal poisoning, 173; two cases of diphtheria successfully treated by antitoxin, Phelps, J. S., 184; thyroid extract in cases of myxedema, Rogers, J. K. P., 194; the treatment of typhoid fever by intestinal asepsis, Benedict, A. L., 204; the clinical results of the use of tuberculin in tubercular consumption, Taylor, H. L., 211; on electricity in the hands of the general practitioner, Saltmarsh, G. H., 215; the etiology of diphtheria and the use of antitoxin, Ernst, H. C., 228; the preparation of diphtheria antitoxin, Goodale, J. L., 235; diphtheria and the antitoxin treatment, Robie, W. F., 238; the clinical use of diphtheria antitoxin, Park, W. H., 255; antitoxin in diphtheria, Withington, C. F., 260; antitoxin in diphtheria, Sears, G. G., 261; report upon food, drugs and articles of domestic use, Davenport, B. F., 264; intravenous injections of mercuric chloride, 278; dessicated thyroids in goitre, Ingals, E. F., 298; electrolysis by a current-controller for the reduction of spurs of the nasal septum, Casselberry, 299; hysterical amblyopia and amaurosis, report of five cases treated by hypnotism, Booth, J. A., 324; electrotherapy as a means of diagnosis in gynecology, Apostoli, 382; a persevering therapeutist, Baaye, M. H., 383; cardiac stimulants, Vickery, H. F., 395; iodoform ointment injections in the treatment of suppurative adenitis of the groin, Hayden, J. R., 418; the infiltration method of local anesthesia in genito-urinary surgery, Lewis, B., 419; circumstances under which chloroform is preferable to ether as an anesthetic, Gay, G. W., 433; permanganate of potash as an antidote for morphine poisoning, 474; report on therapeutics, Williams, F. H., 514; the present status of sero-therapy, 550; the bacteriological examinations of nine autopsies on cases of diphtheria treated with antitoxin, Stokes, W. R., 581; the value and limits of electrolysis in dermatology, 593; the gold combinations as alteratives, Stucky, T. H., 595; cod-liver oil, Stewart, F. E., 596; the use of dry heat of high temperature in the treatment of joint diseases, Wirt, W. E., 627; saccharum album as an oxytocic, Chenery, E., 63.
Meccan Pilgrimage, 74.
Melancholia cured by intra-nasal operation, Bosworth, F. H., 300.
Meltzer, S. J. On the direct faradization of the mucous membranes of the stomach and the intestines in animals — dogs, cats and rabbits, 21.
Meningitis. Cerebro-spinal meningitis in an infant, 120.
Metritis as a cause of miscarriage, Cumston, C. G., 201, 225, 253, 281.
Mioulicz. A report on one hundred and three operations on the stomach, 122.
Militia. Medical officers of the State militia and the Army Medical School, Washington, 577.
Milk. The modified milk question, 287; the inspection of milch cows in Rome, 354.
Milliken, M. The castration of criminals, 98.
Mills, C. K. The localization of lesions in the pons, 349; cortical localization in the light of recent researches into the minute anatomy of the cortex, 374.
Mind. Statistics concerning insanity, Lane, E. B., 161; melancholia cured by intra-nasal operation, Bosworth, F. H., 300; the law of commitment of the insane, 326; the pulse in insanity, original study of cases, Kellogg, T. H., 349; legislative provisions for insane criminals in Massachusetts, Harrington, A. H., 481; psychical research and Eusapia Palladino, 602; treatment of morphinomania, 602.
Minot, F. A case of apparent hermaphroditism, 112, 116.
Miscarriage. Metritis as a cause of miscarriage, Cumston, C. G., 201, 225, 253, 281.
Mitchell, D. Popular therapeutics at the beginning of the eighteenth century, 97.
Mitra, N. C. Case of fatal diarrhea (cholera) due to ascarides, 567.
Mixter, S. J. Congenital esophageal pouch, excision, immediate suture of esophagus, recovery, 116.
Monks, G. H. A case of stab wound of the abdomen with wound of the intestine, protrusion of the intestine through the wound, operation, recovery, 87, 88.
Moore, J. E. Removal of the astragalus for talipes valgus, 446.
Morgan, E. L. Death by submersion, 579.
Morphinomania. Treatment of morphinomania, 602.
Morrill, F. G. Resuscitation after submerging, 579.
Morris, H. C. L. The etiology of goitre, 122.
Morrow, A. P. Urticaria pigmentosa, a case twenty years under observation, 592.
Morrow, C. H. Liquor amnii escaping from an unoccupied subdivision of fetal membranes, 621.
Mortality. What number of cases is necessaay to eliminate the effect of chance in mortality statistics, especially those of typhoid fever, a statistical study, Prince, M., 392.
Mouth Cancer of the lip, tongue, floor of mouth and pharynx, Connor, P. S., 68.
Mulhall, J. C. A case of traumatic cardiac neurosis, 211; the cigarette habit, 323.
Mumford, J. G. Penetrating wounds of the abdomen, 81, 87; teachings of the old surgeons, 333, 367.
Munde, P. F. The present treatment of uterine displacement, 471.
Murphy. The dangers of Murphy's button, 351.
Mycetoma. A case of Madura foot disease (mycetoma pedis), Adami, J. G., 18.
Myelites. The infectious myelites, 274.
Myxedema. Thyroid extract in cases of, Rogers, J. K. P., 194.
Napoleon. The last sickness of Napoleon Bonaparte, 47.
Neck. Extensive dissection for malignant disease of the neck, previous to dissection treated by cancroin, Porter, C. A., 14.
Nervous System. The treatment of sclerosis, of various forms of paralysis and other nervous derangements, by suggestion, Osgood, H., 32, 40; injuries to pneumogastric and phrenic nerves, Park, R., 118; cerebro-spinal meningitis in an infant, 120; palliative trephining in cerebral tumor, Albert, 123; a unique case of apoplexy, Bibber, R. D., 193; cerebral embolism, Hilton, J. F., 193; neurasthenia, Hart, W. F., 193; an important early sign of tabes, Putnam, J. J., 223; the treatment of tetanus with tetano-antitoxin, Marson, 251; the cerebral pathology of Asiatic cholera, 276; experimental degenerations following unilateral lesions of the cortex cerebri in the monkey, 302; hysteria in the male, Dandridge, N. P., 306; hysterical amblyopia and amaurosis, report of five cases treated by hypnotism, Booth, J. A., 324; a case of total hysterical anesthesia in the male, Preston, G. J., 325; recurrent oculo-motor palsy, with a case, De Schweinitz, G. E., 341; two cases of "railway spine," with autopsy, Dercum, F. X., 346; the part of inhibition in the physiology of respiration, Porter, W. T., 348; the localization of lesions in the pons, Mills, C. K., 349; hyperostosis cranii (cephalomegaly), with illustrations, Putnam, J. J., 373; cortical localization in the light of recent researches into the minute anatomy of the cortex, Mills, C. K., 374; presentation of a brain tumor, Walton, G. L., 375; a case of hereditary chorea, with autopsy, Dana, C. L., 376; lantern exhibition of the medulla oblongata of a chimpanzee, with other specimens, Taylor, E. W., 376; tabes dorsalis combined with multiple sclerosis, Taylor, E. W., 377; report of a case of peroneal muscular atrophy, with autopsy, Krauss, W. C., 377; the etiology of obstetrical paralysis, Walton, G. L., 377; lesions produced by the action of certain poisons on the nerve-cell, 378; Craig Colony for epileptics, 381; the diagnosis of pachymeningitis interna hemorrhagica, Bullard, W. N., 461; exploration of the lateral sinus, Green, J. O., 505; a case of cancer of the cerebellum, metastatic from the breast, death, autopsy, Garceau, E., 543; traumatism as a cause of tubercular meningitis, 632; multiple neuritis the essential element in Landry's paralysis, Walton, G. L., 637, 650.
Newcomb, J. E. Ludwig's angina, 301.
New England Invalid, Edes, R. T., 53, 77, 101; modern female invalidism, Jacobi, M. P., 174.
Newton, R. C. Some observations which appear to establish the aerial transportation of malarial germs, 212.
New York. Two factors in the production of disease in New York City, Darlington, T., Jr., 213.
Nose. Some methods of treating diseases of the nose and throat, Douglass, O. B., 217; melancholia cured by intra-nasal operation, Bosworth, 300; suppurative ethmoid disease, followed by invasion of the sphenoidal sinus, abscess of the brain and death, Bosworth, 300; a consideration of some of the more important principles of intra-nasal surgery, Simpson, W. K., 300; a further contribution to the study of suppurative disease of the accessory sinuses, Bryan, J. H., 300; necrosis of the middle turbinate, Thrasher, A. B., 322; congenital osseous occlusion of the nares, Thrasher, A. B., 323; the condition of the nose in phthisical patients, Clark, J. P., 342.
Northrup, W. P. Gonorrheal arthritis; clinical observations, 18.
Nurses. A training-school for nurse attendants, 96.
Oakes, W. K. Vaginal hysterectomy, 193.
Olshausen. The first cry, 407.
Opium Poisoning. Permanganate of potash as an antidote for morphine poisoning, 474.
Orthopraxy. Bow legs, Peckham, F. E., 317; the employment of mechanical force in treatment of lateral curvature, 357; the growth and prosperity of the American Orthopedic Association, Ridlon, J., 445; congenital absence of radii, McCurdy, S. L., 446; removal of the astragalus for talipes valgus, Moore, J. E., 446; tendon transplantation in the treatment of deformities resulting from infantile paralysis, Goldthwait, J. E., 447; a study of the weak foot, with reference to its causes, its diagnosis and its cure, with an analysis of one thousand cases of so-called flat-foot, Whitman, R., 447; ambulatory treatment of Pott's disease, Lovett, R. W., 448; a new spine brace, Hoadley, A. E., 448; report of four cases of spondylitis of the second cervical vertebra, Sayre, R. H., 449; excision of the knee as an orthopedic procedure, Plimpton, W. O., 449.
Osgood, H. The treatment of sclerosis, of various forms of paralysis and other nervous derangements, by suggestion, 32, 40.
Otis, W. K. Hematuria, 400.
Packard, J. H. The operation for the radical cure of hernia, 45.
Pain. The physical effects of pain, 631.
Paranoiac a menace to society, Burr, C. B., 629.
Park, R. On the consequences of hyperemia and the pathology of inflammation and suppuration, 117; injuries to pneumogastric and phrenic nerves, 118; address at meeting of the Harvard Medical Alumni Association, 268; the deformities and malformations resulting from acute infections in bone, 448.
Park, W. H. The clinical use of diphtheria antitoxin, 255.
Parker, W. A. Sarcoma of the choroid, 491.
Pasteur. Professor Louis Pasteur, 350; Virchow on Pasteur, 529.
Pathology. Report on pathology, Wright, J. H., 397.
Pavement. Cork pavement, 431.
Peale, A. C. The geographical distribution of the mineral springs of the United States, 212.

Peckham, F. E. Bow legs, 317.

Peifer. On the immunizing and curative effect of antitoxic blood-serum of the sheep in typhoid intoxication, 146.

Pepper. The William Pepper laboratory of clinical medicine 603.

Perineum. Notes on the repair of rupture of the perineum through the sphincter ani, Burrage, W. L., 108.

Personal Service as the especial exponent of a great profession, Marcy, H. O., 309.

Pharynx. Total extirpation of the epiglottis by sub-hyoidean pharyngotomy, 426.

Phelps, J. S. Two cases of diphtheria successfully treated by antitoxin furnished by the Massachusetts State Board of Health, 184.

Phillips, W. F. R. Mean atmospheric temperature, 211.

Phthisis. The condition of the nose in phthisical patients, Clark, J. P., 342.

Physician. Evolution of the physician and surgeon, 24.

Pilgrimage. Meccan pilgrimage, 74.

Pinkham, J. G. An unusual cranial fracture, 425.

Play-Impulse. The conservative value of the play-impulse, Rosse, J. C., 385.

Plimpton, W. O. Excision of the knee as an orthopedic procedure, 449.

Policemen. Our corpulent policemen, 527.

Porter, C. A. Extensive dissection for malignant disease of the neck, previous to dissection treated by cancroin, 14.

Porter, M. F. Celiotomy in general suppurative peritonitis with the report of a case, 597.

Porter, W. T. The part of inhibition in the physiology of respiration, 348.

Post, A. The treatment of prostatic hypertrophy, 191.

Pott's Disease. Ambulatory treatment of Pott's disease, Lovett, R. W., 448.

Pregnancy, affections connected with. Aseptic midwifery among the very poor, Young, C. D., 4; two illustrative cases of posterior position of the occiput, Townsend, C. W., 112, 116; a case of apparent hermaphroditism, Minot, F., 112, 116; recent progress in obstetrics, Reynolds, E., 112; diffuse hypertrophy of the breast, Anthony, F. W., 185; pyosalpinx, Thompson, J. F., 193; metritis as a cause of miscarriage, Cumston, C. G., 201, 225, 253, 281; brief notes of a thousand cases in obstetric practice extending over a number of years, Venables, J., 289; the etiology of obstetrical paralysis, Walton, G. L., 377; a case of criminal abortion with peculiar features, Birge, W. S., 412, 424; three cases of extra-uterine pregnancy, Johnson, F. W., 464; abdominal section for puerperal septicemia, Baldy, J. M , 493; the treatment of puerperal eclampsia, Reamy, T. A., 519; the prophylaxis and treatment of puerperal eclampsia, Davis, E. P., 520; deciduoma malignum, Williams, J. W., 521; a case of spontaneous rupture of the uterus, Townsend, C. W., 589. 509; hysterectomy for puerperal sepsis, when shall it be performed? with a report of four cases, Holmes, B., 596; a case of extra-uterine pregnancy, Richardson, M. H., 599; a case of extra-uterine pregnancy, Worcester, A., 599; liquor amnii escaping from an unoccupied subdivision of fetal membranes, Morrow, C. H., 621: saccharum album as an oxytocic, Chenery, E., 635.

Prentiss. Exhibition of a case of albuminuric retinitis consequent upon an attack of purpura hemorrhagica rheumatica, 17.

Preston, G. J. A case of total hysterical anesthesia in the male, 325.

Prince, M. What number of cases is necessary to eliminate the effect of chance in mortality statistics, especially those of typhoid fever, a statistical study, 392.

Profession. Comparative standing of the American medical profession, 173; the profession as viewed by the public, Stedman, C. E., 177.

Prostate. Result of treatment of hypertrophy of the prostate, White, J. W., 45, 420; the treatment of enlarged prostate, Cabot, A. T., 149; the operative treatment of prostatic hypertrophy, Watson, F. S., 154; castration for hypertrophy of the prostate, Thayer, F. C., 182; discussion on prostatic hypertrophy, Bangs, L. B., Keyes, E. L., Post, A., Allen, G. W., 186; a tabulated report of 27 operations for prostatomyomectomy by the suprapubic route, with remarks, Bryson, J. P., 420; six successful and successive cases of prostatectomy, Fuller, E., 421; a case of complete castration for prostatic overgrowth, observation for four months, Bryson, J. P., 420.

Prostitution, Stone, A. K., 29, 42; the economics of prostitution, 525.

Pulse in insanity, original study of cases, Kellogg, T. H., 349.

Putnam, J. J. Modern views of the nature and treatment of exophthalmic goitre, 131; an important early sign of tabes, 223; hyperostosis cranii (cephalomegaly) with illustrations, 373.

Pyosalpinx, Thompson, J. F., 193; Warren J. C., 557.

Radius. Congenital absence of radii, with operation, McCurdy, S. L., 446.

Railways. International conference regarding the sanitary administration of railways and navigation, 146.

Railway Spine. Two cases of "railway spine," with autopsy, Dercum, F. X., 346.

Reamy, T. A. The treatment of puerperal eclampsia, 519.

Recent Progress. Therapeutics, Williams, F. H., 37; obstetrics, Reynolds, E., 112; cases at the Infants' Hospital, Boston, Rotch, T. M., and Wentworth, A. H., 164; thoracic diseases, Sears, G. G., 207; chemistry, Hills, W. B., 241; dermatology, Bowen, J. T., 290; pathology, Wright, J. H., 397; gynecology, Davenport, F. H., 442; otology, Blake, C. J., 467; anatomy, Dwight, T., 492; therapeutics, Williams, F. H., 514; laryngology, Coolidge, A., Jr., 545; genito-urinary surgery, Watson, F. S., 567; diseases of children, Rotch, T. M., and Wentworth, A. H., 589; ophthalmology, Standish, M., 646.

Rectum. The modern operative treatment of rectal cancer, Gerster, A. G., 92.

Reed, C. A. L. Further observations on the radical cure of rupture by the intrapelvic method, with illustrative cases, 627.

Registration. An act to regulate the registration of births in Rhode Island, 50; the Illinois State Board of Health and the Southwestern Woman's Medical College, 51.

Respiratory System. Removal of a brass safety-pin from the right primary bronchus, Homans, J., 164; report on thoracic diseases, Sears, G. G., 207; recent measures for the prevention and treatment of tuberculosis, Hinsdale, G., 210; the clinical results of the use of tuberculin in pulmonary consumption, Taylor, H. L., 211, the influence of heredity upon the progress of phthisis, Solly, S. E., 212; the relation of damp air to diseases of the air-passages, particularly in the lake region, Roe, J. O., 298; the influenza bacillus and abscess of the lung, 304; tuberculosis of the upper air-passages, Wright, J., 321; relation of vasomotor disturbances to diseases of the upper air-tract, Daly, W. H., 323; the condition of the nose in phthisical patients, Clark, J. P., 343; the part of inhibition in the physiology of respiration, Porter, W. T., 348; the lungs of one of Koch's earliest tuberculin patients, 498; pulmonary infarction, Garceau, E., 620.

Reynolds, E. Recent Progress in Obstetrics, 112.

Richardson, M. H. Surgical clinic at the Massachusetts General Hospital before members of the Massachusetts Medical Society, 9; a case of acute intestinal obstruction from the impaction of an enterolith; operation; death, 15; pathological specimens, 17, 90; a case of extra-uterine pregnancy, 599; a large uterine fibroid complicated by stone in the bladder, abdominal hysterectomy and litholapaxy, recovery, 619; anatomical specimens, 625.

Ridlon, J. The growth and prosperity of the American Orthopedic Association, 445.

Roberts, J. B. Revival of the *Index Medicus*, 407.

Robertson, J. S. Medicine and surgery among the Australian aborigines, 500.

Robie, W. F. Diphtheria and the antitoxin treatment, 238.

Robinson, J. F. Report on surgery, 214.

Roe, J. O. The relation of damp air to diseases of the air-passages, particularly in the lake region, 298.

Rogers, J. K. P. Thyroid extract in cases of myxedema, 194.

Rosse, J. C. The conservative value of the play-impulse, 385.

Rotch, T. M. and Wentworth, A. H. Report on recent cases at the Infant's Hospital, Boston, 164; report on diseases of children, 589.

Rush monument fund, 355.

Saliva. The diagnosis of salivary calculus, Lindemann, 606.

Saltmarsh, G. H. On electricity in the hands of the general practitioner, 215.

Saw. A new surgical saw, Skeer, J. D., 449.

Sayre, R. H. Report of four cases of spondylitis of the second cervical vertebra, 449.

Scarlatina. On the transmission of scarlatina by the intermediation of a letter, 403.

Schauta. One thousand major gynecological operations, 453.

Scudder, C. L. Three cases of laparotomy for penetrating wounds of the abdomen. 85, 87.

Sears, G. G. Recent progress in thoracic disease, 207; antitoxin in diphtheria, 261.

Senescence. The proximate cause of senescence and death, why these are necessary, 195.

Sero-therapy. The present status of sero-therapy, 550; a doubter on sero-therapy in diphtheria, 633.

Shattuck, G. B. Address before Harvard Medical Alumni Association, 140.

Shepherd, F. J. A remarkable drug eruption, 572.

Shepherd, G. R. The sun-glass as a surgical instrument, 635.

Sherwell, S. Address before American Dermatological Association, 547.

Simpson, W. K. A consideration of some of the more important principles of intra-nasal surgery, 300.

Skeer, J. D. A new surgical saw, 449.

Skin. Report on dermatology, Bowen, J. T., 291; acne of the seborrheic conditions, 328; modern theories and treatment of eczema, Bowen, J. T., 361; the study of dermatology in Europe, White, C. J., 478, 501, 529, 554, 577; an etiological puzzle, White, J. C., 557; the epitrichial layer of the epidermis and its relationship to ichthyosis congenita, Bowen, J. T., 569; a unique case of agminate folliculitis of parasitic origin, Hartzell M. B., 570; a contribution to the study of mycetoma, Hyde, J. N., 571; notes on drug eruptions, Fordyce, J. A., 571; a remarkable drug eruption, Shepherd, F. J., 572; syphilitic warts, Free, J. E., 584; urticaria pigmentosa, a case twenty years under observation, Morrow, A. P., 592; statistical report on skin cases, Hyde, 593; ulerythema sycosiform, Cantrell, 593; the value and limits of electrolysis in dermatology, Zeisler, 593.

Skull. Abnormal attachment of the atlas to the base of the skull, Slade, D. D., 57; hyperostosis cranii (cephalomegaly) with illustrations, Putnam, J. J., 373; an unusual cranial fracture, Pinkham, J. G., 425.

Slade, D. D. Abnormal attachment of the atlas to the base of the skull, 57.

Smith, A. L. Experience with ventro-fixation and Alexander's operation, 471.

Smith, H. L. The treatment of elbow-joint fractures in the position of acute flexion, without splints, with report of cases, 1, 14.

Smith, P. Fatal case of traumatic aneurism of aberrant right subclavian artery, 74.

Societies. American Association of Genito-Urinary Surgeons, 399, 418; American Climatological Association, 210; American Dermatological Association, 547, 569, 592; American Electro-Therapeutic Association, 430; American Gynecological Society, 469, 493, 519; American Laryngological Association, 296, 321; American Neurological Association, 324, 346, 373; American Orthopedic Association, 445; American Surgical Association, 45, 67, 91, 116; Association of American Physicians, 17; Boston Medico-Psychological Society, 648; Boston Society for Medical Improvement, 40, 66, 157, 623; Harvard Medical Alumni Association, 140, 266, 294; Maine Medical Association, 193; Massachusetts Medical Society, 186; Massachusetts Medico-Legal Society, 423; Mississippi Valley Medical Association, 595, 626; New Hampshire Medical Society, 214; Obstetrical Society of Boston, 115, 548; Suffolk District Medical Society, 14, 87.

Soil. Microbe ferments of the soil, 143.

Solly, S. E. The influence of heredity upon the progress of phthisis, 212.

Spine. Ambulatory treatment of Pott's disease, Lovett, R. W., 448; a new spine brace, Hoadley, A. E., 448; report of four cases of spondylitis of the second cervical vertebra, Sayre, R. H., 449; a case of acute osteo-arthritis involving the whole cervical region of the

spine, in a woman nearly sixty years of age, with recovery, Goldthwait, J. E., 644.
Spleen. Some observations on the spleen and marrow in leukemia, Guiteras, J., 20.
Splints. The new surgical splinting, Tracy, E. A., 513.
Springs. The geographical distribution of the mineral springs of the United States, Peale, A. C., 212.
Standish, M. Recent progress in ophthalmology, 646.
State Medicine. A degree in State Medicine, 26.
Stedman, C. E. The profession as viewed by the public, 177.
Stewart, F. E. Cod-liver oil, 596.
Stokes, W. R. The bacteriological examinations of nine autopsies on cases of diphtheria treated with antitoxin, 581.
Stomach. A report on one hundred and three operations on the stomach, Mieulicz, 122.
Stone, A. K. Prostitution, 29, 42.
Strophanthus. Some of the uses of strophanthus, Wadleigh, W. K., 216.
Stucky, T. H. The gold combinations as alteratives, 595.
Sulphonal poisoning, 173.
Sun-glass as a surgical instrument, Shepherd, G. R., 635.
Sunshine statistics, Harrington, M. W., 211.
Suprarenal capsules. A case of Addison's disease, Winslow, K., 36.
Surgery. Surgical clinic at the Massachusetts General Hospital before members of the Massachusetts Medical Society, 9; report on surgery, Robinson, J. F., 214; teachings of the old surgeons, Mumford, J. G., 333, 367; recent progress in surgery, Burrell, H. L., and Cushing, H. W., 344; the recent evolution of surgery, Gould, P., 429.
Sutton, R. S. Specimens removed by vaginal and abdominal hysterectomy, 518.
Suture. The buried tendon suture, 574.
Symbol of medicine, 498.
Syphilis as described and treated by the Chinese, 402; syphilitic warts, Free, J. E., 584; case of syphilide, Jackson, H., 623.
Tabes. An important early sign of tabes, Putnam, J. J., 223; tabes dorsalis combined with multiple sclerosis, Taylor, E. W., 377.
Tanner, J. A. A case of spontaneous perforation of the heart with obscure symptoms, 62, 66.
Tapeworm, Cutler, E. G., 623.
Taylor, E. W. Lantern exhibition of the medulla oblongata of a chimpanzee, with other specimens, 376; tabes dorsalis combined with multiple sclerosis, 377.
Taylor, H. L. The clinical results of the use of tuberculin in pulmonary consumption, 211.
Taylor, R. W. Gonorrhea in the female, 401.
Teeth. Hemorrhage after tooth extraction, McNaught, J., 173.
Temperature. A case of hyperthermy, Jacobi, A., 19; a comfortable way of using cold in fevers, Williams, F. H., 20; mean atmospheric temperature, Phillips, W. F. R., 211.
Tetanus. The treatment of tetanus with tetano-antitoxin, Marson, 251.
Thayer, F. C. Castration for hypertrophy of the prostate, 182, 193; a case of penetrating wound of the abdomen and large intestine, Thayer, F. C., 588.
Therapeutics. Report on therapeutics, Williams, F. H., 37.
Thompson, J. F. Pyosalpinx, 193; displacement of the gall-bladder, 194.
Thorndike, P. Remarks on the operative treatment of strictures of the deep urethra, 417, 422.
Thrasher, A. B. Necrosis of the middle turbinate, 322; congenital osseous occlusion of the nares, 323.
Thyroid. Thyroid extract in cases of myxedema, Rogers, J. K. P., 194; thyroidismus, 403.
Tonsils. Some remarks on removal of the tonsils, Farlow, J. W., 299.
Townsend, C. W. Two illustrative cases of posterior position of the occiput, 106, 116; a case of spontaneous rupture of the uterus, 589, 599.
Trachelorrhaphy. The ultimate results of trachelorrhaphy, Ford, W. E., 520.
Tracy, E. A. The new surgical splinting, 513.
Training school for nurse attendants, 96.
Trephining. Prehistoric trephining in Russia, 635.
Trichinosis. A case of trichinosis, death, autopsy, Garceau, E., 512.
Tuberculin. The clinical results of the use of tuberculin in pulmonary consumption, Taylor, H. L., 211; tuberculosis of the upper air passages, Wright, J., 321; tuberculosis and neoplasms of the bladder, surgery or hygiene, Bangs, L. B., 399; tuberculin *vs.* the microscope in Iowa, 429.
Tuberculosis. Recent measures for the prevention and treatment of tuberculosis, Hinsdale, G., 210; tubercular peritonitis, Dunning, L. H., 596; the importance of frequent observations of temperature in the diagnosis of chronic tuberculosis, Channing, W., 609, 624; traumatism as a cause of tubercular meningitis, 632.
Tumor. Palliative trephining in cerebral tumor, Albert, 123.
Tuttle, A. H. A brief *résumé* of the indications for hysterectomy, 559.
Twins. A family tendency to twins, McPhail, D., 635.
Typhoid Fever. The treatment of typhoid fever by intestinal asepsis, Benedict, A. L., 204; what number of cases is necessary to eliminate the effect of chance in mortality statistics, especially those of typhoid fever, a statistical study, Prince, M., 392.
Urinary System. A simple expedient for the treatment of nocturnal enuresis, 23; result of treatment of hypertrophy of the prostate, White, J. W., 45, 420; pyelo-nephritis, nephrectomy, recovery, Goldthwaite, S. V., 86, 90; the treatment of enlarged prostate, Cabot, A. T., 149; the operative treatment of prostatic hypertrophy, Watson, F. S., 154; stone in the bladder of a girl of five years, Homans, J., 161; castration for hypertrophy of the prostate, Thayer, F. C., 182, 193; a case of cancer of the urethra, Cabot, A. T., 320, 422; a curious anomaly, Lannelongue, 331; tuberculosis and neoplasms of the bladder, surgery or hygiene, Bangs, L. B., 399; hematuria, Otis, W. K., 400; remarks on the operative treatment of strictures of the deep urethra, Thorndike, P., 417, 422; the infiltration method of local anesthesia in genito-urinary surgery, 419; three cases of epithelioma of the penis, Wishard, W. N., 419; a tabulated report of 27 operations for prostatomyomectomy by the suprapubic route, with remarks, Bryson, J. P., 420; six successful and successive cases of prostatectomy, Fuller, E., 420; a case of complete castration for prostatic overgrowth, observation for four months, Bryson, J. P., 420; traumatic rupture of the urethra, restoration after thirty-six years, Chismore, G., 423; a case of abdominal nephrectomy for cystic kidney, recovery, Atwood, C. A., 440; the renal catheter and its use in the diagnosis and treatment of renal diseases, Kelly, H. A., 469; the relations of lithemia to diseases of the pelvic organs in women, Mann, M. D., 494; renal insufficiency in gynecological cases, Etheridge, J. H., 494; renal calculus, Warren, J. C., 539; recent progress in genito-urinary surgery, Watson, F. S., 567.
Utah Board of Medical Examiners revoke a license for unprofessional and dishonorable conduct, 223.
Van de Warker, E. A few cases of true pelvic cellulitis, a plea for more thorough pelvic surgery, 520.
Venables, J. Brief notes of a thousand cases in obstretric practice extending over a number of years, 289.
Vickery, H. F. Cardiac stimulants, 395; an unusual case of aortic regurgitation, 566.
Vivisection. Concerning vivisection, 72; the effect of vivisection upon the greatest of vivisectors, 122; another word concerning vivisection, Leffingwell, A., 147.
Wadleigh, L. K. Some of the uses of strophanthus, 216.
Walton, G. L. Presentation of a brain tumor, 375; the etiology of obstetrical paralysis, 377; multiple neuritis the essential element in Landry's paralysis, 637, 650.
Warren, J. C. Clinical experience in abdominal surgery at the Massachusetts General Hospital, 488, 507, 536, 557, 582; appendicitis, 488; gall-stones, cholecystotomy, choledochotomy, 507; exploratory laparotomy, 508; radical cure of hernia, 509; fibroids, perforation of the uterus, chronic intestinal obstruction, colotomy, renal calculus, 536; pyosalpinx, 557.
Water. The geographical distribution of the mineral springs of the United States, Peale, A. C., 212.
Wathen, W. H. Vaginal hysterectomy for uterine myomata and diseases of the adnexa, 495.
Watson, F. S. The operative treatment of prostatic hypertrophy, 154; recent progress in genito-urinary surgery, 567.
Weeks, S. H. A case of cholecystectomy, 118; tubercular disease of the knee-joint, 194.
White, C. J. The study of dermatology in Europe, 478, 501, 529, 554, 577.
White, J. C. An etiological puzzle, 557.
White, J. W. Result of treatment of hypertrophy of the prostate, 45, 67, 420.
Whitman, R. A study of the weak foot with reference to its causes, its diagnosis and its cure, with an analysis of one thousand cases of so-called flat-foot, 447.
Weir, R. F. Influence of ether upon the kidneys, 93.
Wight, J. S. Cancer of the breast, 92.
Williams, F. H. A comfortable way of using cold in fevers, 20; report on therapeutics, 37, 514.
Williams, J. W. *Deciduoma malignum*, 521.
Winslow, K. A case of Addison's disease, 36; diphtheria antitoxin at the Newton Hospital, 503.
Wirt, W. E. The use of dry heat of high temperature in the treatment of joint diseases, 627.
Wishard, W. N. Three cases of epithelioma of the penis, 419; address before the Mississippi Valley Medical Association, 595.
Withington, C. F. Antitoxin in diphtheria, 260.
Wood, H. C. A judicious valedictory address, 170.
Women Physicians. The needs and shortcomings of women physicians, Jacobi, M. P., 146.
Worcester, A. The modified milk question, 287; a case of extra-uterine pregnancy, 599.
Wright, J. Tuberculosis of the upper air-passages, 321.
Wright, J. H. Report on pathology, 397.
Wylie, W. G. The prevention of uterine disease due to child-bearing, 520.
Wyman, M. Cottage hospitals, 284, 312.
Young, C. D. Aseptic midwifery among the very poor, 4.
Zeisler. The value and limits of the usefulness of electrolysis in dermatology, 593.

[FOUR EXTRA PAGES.]

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PAGE

ORIGINAL ARTICLES.

The Treatment of Elbow-Joint Fractures in the Position of Acute Flexion, without Splints; with Report of Cases. *By H. L. Smith, M.D.*, Assistant Visiting Surgeon, Boston City Hospital ... 1

Aseptic Midwifery among the Very Poor. *By C. D. Young, M.D.* (Harv.), Rochester, N. Y. ... 4

Two Cases of Cyst of the Finger. *By F. M. Briggs, M.D.*, Surgeon to the Boston Dispensary ... 7

CLINICAL DEPARTMENT.

Surgical Clinic at the Massachusetts General Hospital before Members of the Massachusetts Medical Society. *Reported by M. H. Richardson, M.D.*, One of the Visiting Surgeons ... 9

Congenital Ankyloblepharon. *By William Dudley Hall, M.D.*, Assistant Ophthalmic Surgeon to the Massachusetts Charitable Eye and Ear Infirmary, Boston, Mass ... 14

REPORTS OF SOCIETIES.

Surgical Section of the Suffolk District Medical Society. *C. L. Scudder, M.D.*, Secretary ... 14

Extensive Dissection for Malignant Disease of the Neck, Previous to Dissection Treated by Cancroin.—Cyst of the Finger, with Two Cases.—The Treatment of Elbow-Joint Fractures by Acute Flexion without Splints; Results, with Cases.—A Case of Acute Intestinal Obstruction from the Impaction of an Enterolith; Operation; Death.—Pathological Specimens.

Association of American Physicians. The Tenth Annual Meeting, Washington, May 30 and 31, 1895. (Concluded.) ... 17

Second Day. (Continued.)—Exhibition of a Case of Albuminuric Retinitis Consequent upon an Attack of Purpura Hemorrhagica Rheumatica.—A Case of Madura Foot Disease (Mycetoma Pedis).—Gonorrheal Arthritis, Clinical Observations.—A Case of Hyperthermy.—Some Observations on the Spleen and Marrow in Leukemia.—A Comfortable Way of Using Cold in Fevers.—Goitre in Michigan.—Displacements of the Liver.—Carcinoma of the Liver with Cirrhosis.—On the Direct Faradization of the Mucous Membranes of the Stomach and the Intestines in Animals: Dogs, Cats and Rabbits.

RECENT LITERATURE.

The Disorders of Speech. By John Wyllie, M.D., F.R.C.P. Edinburgh: Oliver & Boyd. 1895 ... 21

EDITORIALS.

Recent Experiments on the Parasites of Malaria ... 22

A Simple Expedient for the Treatment of Nocturnal Enuresis ... 23

Evolution of the Physician and Surgeon. 24

Medical Notes ... 25

Professor Trendelenburg.—A Medical School for Women in St. Petersburg.—Archiv für Verdauungskrankheiten.—The Physician as an Athlete.—The American Surgical Association.—Acute Aseptic General Peritonitis.—Bacteria of Graveyard Soil.

Boston and New England.

Annual Dinner of the Harvard Medical Alumni Association.

New York.

Increase in the Force of Sanitary Inspectors.—Mortality of New York City.—Dr. George B. Fowler appointed Health Commissioner.—Resignation of Dr. Cyrus Edson.

MISCELLANY.

A Degree in State Medicine ... 26

A Bullet Discharged from the Body after Twenty-Five Years ... 26

Brilliant Results of Physiological Teaching ... 27

Henry W. Williams, M.D. ... 27

Meteorological Record, June 22, 1895 ... 27

Record of Mortality, June 22, 1895 ... 27

Army Service ... 28

American Orthopedic Association ... 28

Litchfield County Medical Society ... 28

Resignation and Appointments ... 28

Honorary Degree ... 28

Correction ... 28

Recent Deaths ... 28

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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Original Articles.

THE TREATMENT OF ELBOW-JOINT FRACTURES IN THE POSITION OF ACUTE FLEXION, WITHOUT SPLINTS; WITH REPORT OF CASES.[1]

BY H. L. SMITH, M.D.,
Assistant Visiting Surgeon, Boston City Hospital.

The treatment of elbow-joint injuries with the forearm in acute flexion is not new. For the most part, this position has been employed hitherto in sporadic cases to meet special conditions. The most common reason for such treatment is the fact that by this means it is possible to prevent a fragment of bone, or the loosened head of the radius, from slipping into the angle in front of the point, where it would prevent full flexion.

A few surgeons have preferred to put up all fractures of the lower end of the humerus at a point within the right angle. Mr. Thomas, of Liverpool, treated all such cases without splints, simply fastening the hand well up to the neck by means of a halter attached to the wrist; and it appears from a recent discussion on the subject, reported in the *British Medical Journal*, that his successor, Mr. Robert Jones, continues the practice. Professor Markoe, of New York, is reported by Hamilton as advocating flexion to a few degrees less than a right angle, and Dr. Dulles, of Philadelphia, has been led, on purely theoretical grounds, to suggest the same treatment. So far as the writer has been able to learn these surgeons stand alone in this practice.

It may be said at once that acute flexion at the elbow-joint, as employed or advocated hitherto, except perhaps in the case of Dr. Dulles, is entirely different in principle and degree, from that upon which this paper is based.

From a series of experimental fractures of the elbow-joint, undertaken for the purpose of finding at what angle the fragments could best be held in position, and reported in January, 1894, the writer became fully convinced, although in the beginning no such conclusions had been anticipated, that if it were possible, with safety to the patient, to hold the forearm at a point of full, almost forced, flexion, the fragments, once brought into correct position, would remain fixed. More than this, it appeared that the variety of fracture, the direction of the lines of cleavage, and the degree of comminution seemed not to make the slightest difference in the result.

It was almost incredible that so sweeping a statement would prove rigidly true, and the fact was accepted only after the ground had been gone over again and again, and with constant results. So far as any purely experimental work could be said to prove anything, the conclusion seemed justified that after fractures of either condyle, of whatsoever magnitude, after transverse fractures, including epiphyseal separations, after T-fractures, or other comminuted fractures, if the fragments are once replaced, and the forearm completely flexed, no mobility can be detected and it is almost an impossibility to reproduce the deformity. In no other position of the forearm is this true, even to a small degree. As long as the coronoid process remains intact, and either the triceps tendon or the posterior ligament retains its connection with the olecranon process, the locking has always proved solid.

It will thus be seen at once that the term "acute flexion," as used in this paper, means something entirely different from the same expression as employed in the past. It contemplates a flexion of the forearm carried to its limit and applied to every variety of fracture involving the joint region, save only that of the olecranon process.

Can this extreme flexion be employed with safety in a limb whose soft parts are severely lacerated, and the seat of extravasation and effusion, more especially as in addition, there is involved a joint whose capsule speedily becomes distended? And even if the arm itself be not imperilled, can such a tense position be tolerated by the patient?

The cases first treated were watched with great care and some misgiving but no untoward symptom developed, and so far as the writer knows nothing has occurred in any subsequent case to require a change of treatment, either from embarrassment of the circulation or discomfort caused the patient.

A sufficient reason for this immunity appears at once when we consider that in an arm having an average amount of fatty tissue it is found impossible to flex the forearm far enough to stop the radial pulse, the coronoid process bringing up against the humerus when the forearm makes with the upper arm an angle of about 35°, thus giving ample space for the vessels to change their direction without being too sharply bent on themselves or compressed by the soft parts. Unless, then, there are bony fragments so displaced as to press directly upon the vessels, the danger of strangulation is slight, since the extravasated blood and serum is quickly driven from the tissues by the pressure.

The appearance of an elbow that has been treated in acute flexion for several days is instructive. The smooth tense swelling, by this time much pigmented, is present on the posterior and lateral aspects of the joint, whereas, if the forearm be slightly extended, so as to expose the anterior surface, one sees almost no trace of swelling or discoloration, both these ending in a sharply defined line, on each side, at the point where pressure began. One would say that a similar pressure on every part of the joint, if such were possible, would be of material aid in hastening repair.

From the foregoing considerations, therefore, as well as from the collected experience of cases successfully treated during the past two years, it would appear that acute flexion of the elbow can be employed with safety. Is it irksome to the patient? During the first twenty-four hours there is some discomfort, but what proportion of this is a necessary part of the injury or would follow the application of any sort of restraint whatever, and what part is to be attributed to the acuteness of position it is not easy to say. In no case, however, have I known it to be so great as to call for a change of position. Of downright pain, or even of prolonged discomfort, there need be none. In fact it is generally sufficient to make rather moderate pressure, in a fresh accident, and to increase the flexion as the swelling disappears. Indeed, but for the desirability of making the reduction under anesthesia, at the time the examination and diagnosis is made, it would seem good practice to leave the arm without dressing of any kind for several days, during which interrupted bandaging might be applied, and to bring the parts into position and hold them by flexing the arm only when the swelling had partially disappeared. In looking over the records at the Boston City Hospital, I have learned of a method employed by Dr. Post which seems a happy solution of this difficulty. The patient is not etherized immediately on entrance, but after a careful examination, some temporary dressing is applied, usually with the elbow at a right angle. At the end of from three to six days ether is given, the diagnosis confirmed or corrected, as can now be done with much greater ease and certainty, the fragments carefully molded into place, and the permanent treatment, with acute flexion, entered upon.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, April 3, 1895.

In reporting the experiments alluded to above a few cases were given to show the safety of the method. Since that time the plan has been employed in the practice of several surgeons, and the cases at the City Hospital now number in all more than thirty. Of these I have been able to find and take careful measurements of twenty. So far as can be learned from the records all the remaining cases were equally satisfactory.

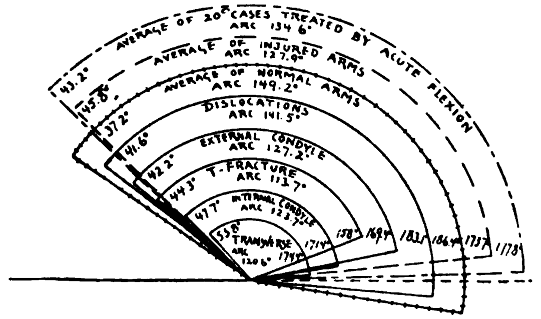
In studying the results obtained two elements demand consideration. Perfect repair supposes not only restoration of function but restoration of form, that is, total absence of deformity. While deformity is often associated with loss of function it is not necessarily so. For practical purposes we may consider the function of the elbow to be identical with its mobility. A perfect result, then, so far as usefulness is concerned, would be the restoration of normal flexion and extension. But uninjured arms often vary not a little in the arc of motion at the elbow, and yet one is as useful as the other. The degree of stiffness which can exist without crippling its possessor is quite remarkable. From a series of seventy-five fractured elbows, recently studied, it was concluded that a motion of from ten to twenty degrees on each side of the right angle would yield an arm so useful that the wage-earning power of the average individual need hardly be diminished a particle. It is only in certain special kinds of skilled labor that more motion is required.

On the question of deformity much has been written during the past few years, especially in this country. Most attention has been given the so-called "gun-stock" arm, sometimes called cubitus varus, and caused by a reversal of the usual humero-ulnar angle.

The weight that has been attached to this subject, and the influence it has had upon methods of treatment is quite surprising. With little or no study of the size of this angle as met with in normal arms, or of its utility and the importance, therefore, of preserving it, the "gun-stock" deformity having been considered to be due to the ordinary methods of dressing the injuries under discussion, not a few surgeons have been led, on this ground alone, it would seem, to employ and advocate a method of treatment which places the forearm, during the first weeks of repair, in the position of full extension. The explanation of the mechanism of this deformity has thus far been largely a matter of theory, and it is the belief of the writer that the views usually held hitherto will not bear close inspection. In a paper soon to be published, this matter will be spoken of more at length, and it need only be said here that the importance of preserving the so-called carrying-angle, has, in the opinion of the writer, been very much exaggerated. If there were other reasons for employing the position of extension they would call for careful consideration before being disregarded, but when, as is the fact, that position is deliberately chosen merely because it allows the humero-ulnar angle to be made equal to that of the other arm, we are justified in concluding that the loss of this angle must be considered a very serious matter, since, to preserve it we are advised to run the risk of an arm permanently extended.

Let us see what conclusions are reached from a study of the angle in normal individuals. As a matter of fact the arms are almost never alike in this respect, the difference in the angle on the two sides being sometimes as much as 10 or 15 degrees. In different people the greatest variation is found, the size of the angle varying from —5° to +30°, and curiously enough, the owners of the arms with little or no angle or even with one reversed never know the lack. Moreover, the reversed angle that follows injury does not cripple the individual, usually, in any of the wage-earning functions. In so far as the reversed angle indicates that the fragments are not in exact position it is worth consideration, for it may lead to a greater care in treatment, but neither from the standpoint of deformity or disability can it alone serve as a sufficient reason for a complete change of treatment.[2]

The twenty cases of this series will not be given in detail, but the results tabulated and the averages compared with those obtained from the series of seventy-five already alluded to, and, in some particulars, with the averages found in normal arms. For convenience the present series will be called Series A; that of the 75 cases Series B; and the normal cases Series C. The method of taking averages is not entirely satisfactory, but is far superior to mere general statements.



VARIETIES. — Ten of these cases were fractures of the external condyle, while there were only three of the internal condyle. Two were transverse fractures, and five T-fractures. There were thus seven cases of the severe type, from which it appears, as shown previously by a study of Series B, that almost all cases of gun-stock deformity arise. In that series the transverse and T-fractures made 40° of the whole. Here we have them in a proportion of 35 per cent., so that a comparison in respect to the angle will be fair.

AGE. — The average age in all cases is nine years; in Series B it was eleven years. It was considered as probably more than mere chance that the average age of those whose external condyle was broken, in Class

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[2] In making this statement the writer does not wish to underrate the importance of avoiding, by every proper means, not only this but every other deformity. In fact, as will appear in the discussion of results, one of the strong reasons for the adoption of acute flexion is the fact that when it is employed in the manner here advised there is almost no tendency whatever toward the formation of the reversed angle. It would not be considered proper, however, to urge a change from ordinary methods to acute flexion if that preservation of the angle were its sole merit.

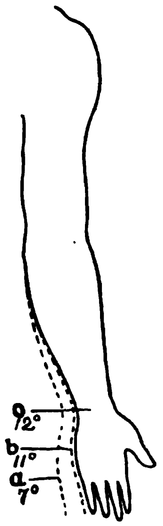
B, was only about half that of those having fractures of the internal condyle, the figures being eight and fifteen years respectively. It is worth noting that in the present series the same difference is noted, the figures being 5.6 years and 14.6 years. It was then suggested, in view of the fact that the elbow angle is known to increase as a child grows, at least in some cases, that the impact which causes the fracture may be directed, in the younger child, more exactly in the line of the arm, and thus cause fracture of the external condyle, or, if greater damage is done, a T-fracture, while in the older one, the angle being greater, the force is directed farther inward toward the internal condyle.

Extension. — Eight, or 40 per cent., gained an extension equal to or greater than that of the other arm; in Class B this was 46 per cent. The average amount of increase, however, was greater in Series A (8.7° as compared with 8.2°). The real test as to motion restored is found in the average number of degrees of extension lost. In Series A it is 8.2°; in Series B, 12.7°. We have made, then, a clear gain of 4.5° in this particular.

Flexion. — Nine cases, or 45 per cent., lost nothing in flexion. In Series B it was 40 per cent. Just 50 per cent in Series A and 46.6 per cent. in Series B had flexion as good or better than before. The total average loss in flexion in this series is 6°, while in Series B it was 8.6°.

To illustrate more clearly: The average normal arc of motion in the arm lies between 37° and 186°. In the 75 cases of Series B this arc was cut off 12.7° in extension and 8.6° in flexion, thus decreasing the arc by 21°. In the present series this figure is 14°, instead of 21° — but two-thirds as much. This gain in arc of motion is well shown in the diagram.

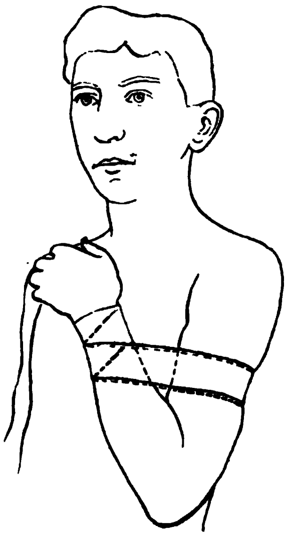
Carrying Angle. — Series A, unchanged 40 per cent., Series B, 10 per cent. The diminution in angle is the most important item, as it is this which causes the internal angle. In this series of cases treated by acute flexion only 30 per cent. show any decrease, whereas in Series B there are 70.6 per cent. The average tendency, in all cases, toward the formation of an internal angle is, in Series A 0.8°, while in the former series it was 7°. That is, there is nine times as great a tendency to the formation of an internal angle after the ordinary methods of treatment as after treatment by acute flexion.

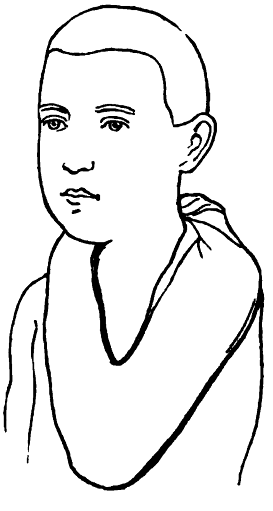


But it has already been intimated that the two arms on the same side rarely correspond in angle. In fifty cases (Series C) it was found that the tendency of one arm over its fellow to form an internal angle is just 1°. It would thus appear that the acute position, which gave a corresponding figure of 0.8°, prevents all tendency in the fragments to slip in such a way as to bring about the internal angle.

Thickness. — Several series of measurements were taken about the joints, but the only one that need be given, since it may be taken in general as an index of the bony changes, is that of the distance between the condyles. In normal cases this distance is not the same on the two sides of the body, the average difference in the 50 cases of Series C being 3.1 millimetres. In Series B the average increase is 5.5 millimetres; in Series A it is 4 millimetres.

Two or three cases, especially of T-fractures, have shown considerable thickening. It has usually been found that these were put up by simply flexing the arm, with no special effort to mold the fragments into place. Obviously this precaution is called for in all cases where there is opportunity for blood and serum to separate fragments. It appeared, from the experiments, that the best reposition was gained if, while the arm was being flexed, the internal condyle was pushed forcibly downward and backward and the joint compressed laterally. The latter manœuvre also prevents that inward rotation of the lower fragment on its antero-posterior axis, in the case of the transverse fracture, which seems to be the real cause of the gunstock deformity.





Not having at hand any splint that would retain the arm in the acute position desired, the writer employed, in the first cases, a broad ribbon of adhesive plaster, applied as a double figure-of-8, near the wrist and as high as possible on the arm. The whole arm was then supported loosely in a sling or was suspended from the neck by means of a bandage fastened to the wrist. This form of dressing is so simple and yet firm and comfortable, and the whole elbow region is left so perfectly free from pressure and open for inspection, that all more complicated forms of apparatus and splints which have been devised and given a trial from time to time have now been discarded in its favor. The very principle, deduced by the experimental fractures, upon which this treatment is based, renders any form of splint unnecessary and indeed an injury. As long as acute flexion is maintained, the fragments being in position, the interlocking bones act upon each other mutually as the very best form of splint, so that any apparatus which holds the forearm flexed fills every requirement. The comfort to the surgeon of being able to dispense with all apparatus hitherto used need only be hinted at.

An exceedingly neat and comfortable dressing, has been evoked in the service of Dr. A. Post in the children's ward at the Boston City Hospital. A sleeve, made at the acute angle desired, is fitted to the arm, one side being stitched up after it is applied, the ends of the sleeve extending far enough to be tied behind the neck as a support. The results after its use have been entirely satisfactory.

No positive rule has been followed as to the length of time during which the acute flexion is maintained. Usually the forearm has been extended by degrees, beginning, according to the case, from the third to the fifth week, until it has reached a right angle, where it is allowed to rest in a sling. In some instances a right-angled splint has been worn for a week or more, but the writer has come more and more to believe that quite as good and rapid results are obtained if no motion whatever and no change in position is permitted for at least four and perhaps five or even six weeks. This is a question on which there is still the widest variance of opinion, and careful study of this point is urgently called for, since there seems no good reason why positive conclusions may not be reached.

To sum up briefly: From the evidence of experimental fractures, and results of clinical experience the writer believes the following propositions justified.

(1) All fractures of the lower end of the humerus, once in position, are held in place if the forearm is kept acutely flexed.

(2) Such flexion can be used without danger to the limb or undue distress to the patient.

(3) The only force required being one of flexion, no rigid apparatus is needed, it being sufficient to strap the forearm to the arm. One of the strong points of this treatment, therefore, is its perfect simplicity.

(4) The only points to emphasize are: Be sure to replace fragments as flexion is made, taking great care that the internal condyle is as low as possible and the joint not widened by effusion between fragments. If the condyle is kept down no gun-stock deformity can occur.

(5) In the cases thus far treated the amount of motion gained has been slightly greater than after ordinary methods. The amount of deformity has been very much less.

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ASEPTIC MIDWIFERY AMONG THE VERY POOR.[1]

BY C. D. YOUNG, M.D. (HARV.), ROCHESTER, N. Y.

THE subject I have chosen for your consideration this evening is, I am well aware, one that is commonplace, and yet I venture to make it the theme of my essay, for the reason that puerperal sepsis is not an unknown thing in this fair city. The operating gynecologist knows it, whether the practising obstetrician does or not. As Reynolds has well said: "Those who are in the habit of believing that the slight disturbances of health and temperature, which either constitute mild sepsis or herald the approach of grave sepsis, are due to milk fever, nervousness, excitement and other indefinite ailments, do not understand that, under strict asepsis, the convalescence from labor is always perfectly smooth and unattended by any elevation of temperature unless some definite entity of intercurrent disease is present."

Taking it for granted then, that puerperal sepsis does occur, even, at times, in the practice of the best physicians, a narration of personal experience may prove the starting-point for profitable discussion.

First, however, let me briefly review the history of aseptic midwifery. It was in 1843 that Dr. Oliver Wendell Holmes began his crusade against filth in the lying-in chamber. It was a hard and well-fought battle and the laurels he then won will remain green as long as any with which the literary world has crowned the Autocrat.

And the need of this fight was only too evident. The great Dublin Hospital was at one time threatened with closure by law, owing to the high mortality among its lying-in patients. A recent report of the Lying-in Department of the New England Hospital shows that, between 1862 and 1872, one out of every 50 cases treated died of sepsis. Since 1884, and up to the date of the report, 897 cases were treated without a death. In 1890, the Out-patient Department of the Boston Lying-in Hospital, where patients are cared for in their own homes by students of the Harvard Medical School, was able to record 1,000 consecutive cases without a death from any cause. In 1893, in this clinic, 1,352 cases were thus treated with but 15 cases of sepsis and but one death — that of a patient who refused appropriate treatment. From personal knowledge, I can testify that these cases are cared for in the most filthy tenements of Boston. It is due to the experience and instruction gained at this clinic, that I can report my cases to-night with so small a percentage of preventable sepsis.

In the New York Maternity, Blackwell's Island, during the year from October 1, 1882, to October 1, 1883, the death-rate from sepsis was 6.06 per cent. and during the last month of that year, it reached 15.69 per cent. of all women confined there. Then Dr. Garrigues introduced the antiseptic system and in the following year, had a death-rate of but .0059 per cent. and in the year 1884–5, he still further reduced the rate to .0018 per cent. The introduction of antiseptic measures in the Boston Lying-in Hospital, enabled Dr. W. L. Richardson to reduce a death-rate from sepsis, of 4.58 per cent., in 1883–4, to .000 in 1886–7.

These figures ought to be conclusive as to the necessity of combating sepsis both in hospital and private practice.

And now as to the technique. It is so simple and involves so little preparation that it can easily be carried out amid the most adverse surroundings. All that is essential is comprised in this list: a box of aseptic vaseline, a piece of soap, a small bottle of carbolic acid, a few tablets for preparing the solutions of bichloride of mercury, a nail-brush, plenty of hot water, a small dish for the carbolic solution and a large one for the bichloride, a fountain syringe, and clean towels or cloths. A non-essential that, in this city, might almost be classed as an essential, is the district nurse. She may be obtained, at any hour, by application at the City Hospital. In all my cases, she has proved a most welcome and efficient aid in the conduct of labor in the slums.

Personal cleanliness is, of course, of prime importance. The obstetrician's habits should include frequent bathing and a frequent change of clothing. He should never be in the condition of him to whom Charles Lamb once said, "If dirt were trumps, you would hold a full hand."

It is my habit to advise patients to send for me as soon as labor begins, that I may have plenty of time for preparation. I also urge them to have a room specially cleaned and arranged for the confinement; but among the very poor this, of course, is seldom done.

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[1] Read before the Rochester Pathological Society, March 28, 1895.

On arriving at the bedside, after cleansing my hands and making the preliminary examination to determine the stage of labor, an enema and a partial bath are administered and then a local scrubbing and a douche with a 1 to 2,000 solution of bichloride of mercury. My hands are prepared by first scrubbing thoroughly with nail-brush and soap in hot water; then, after rinsing the brush until all the soap is washed out (as soap and bichloride of mercury form an inert compound) and removing all superfluous epidermis from beneath and around the nails with a knife-blade, I again scrub my hands and forearms in a 1 to 1,000 bichloride solution. After this last scrubbing, I am careful not to touch anything except a towel soaked in the mercuric solution until after the examination is made. I do not use a lubricant for the examining finger unless it is absolutely necessary. If so, I have a fresh box of eucalyptus vaseline (1 drachm to 1 ounce) in my obstetric bag. Examinations are made as infrequently as possible, and, whenever necessary, the hands are again scrubbed in the bichloride solution.

The bed is arranged by the nurse so that the patient lies between clean sheets, or, in the absence of these, on towels wrung out of the bichloride solution. When the head reaches the floor of the pelvis, and it becomes necessary to hold it back to prevent its too sudden expulsion and consequent rupture of the perineum, the mercuric solution is kept close by for frequent rinsing of the hands. After the expulsion of the placenta, which is expressed by the Crédé method, and not extracted unless adherent, a careful examination is made for tears in the walls of the vagina. If the hand or an instrument has been introduced into the uterus, an intra-uterine douche of 1 to 5,000 or 1 to 3,000 bichloride of mercury, followed by boiled water, is given. The treatment would be similar after the delivery of a macerated fetus. Otherwise no post-partum douches are given. An antiseptic vulvar pad is applied, pinned back and front, to be worn constantly during the puerperium. And then nothing from without is allowed to open the lips of the vulva unless well-marked indication arise.

During the first five or six days after the delivery, the nurse and I call daily, one in the forenoon and the other in the afternoon, in order to have an accurate record of the temperature, pulse and respirations for that period. After that, if all is well, visits are made less frequently until the patient is ready to leave her bed, on the tenth, twelfth or fourteenth day, according to her condition.

Let me now give you the results of this system in my own practice. The thirty cases included in this report were my first private confinement cases, excluding only a few that were among people able to provide properly for the lying-in. These patients were delivered, almost without exception, in the squalid homes of what is known as the Polish section of the city. As most of you know, the filth in many of these hovels is indescribable, while not one of them would be selected as an ideal — I might even say a fit — place for a confinement. The clinical charts which I will pass around, tell their own story more graphically than I can, but perhaps a brief note of each case may be permitted me:

Case 1. Multipara; sixth birth. Normal labor; convalescence uneventful.

Case 2. Multipara; fifth birth; one miscarriage, two years previously. Labor prolonged by large child and inefficient pains. Adherent placenta, pealed out by hand. Intra-uterine douche of 1 to 5,000 bichloride, followed by boiled water. Highest temperature 100.6° F., eighteen hours after delivery. Convalescence uneventful.

Case 3. Multipara; ninth pregnancy, including three miscarriages. Twins at the first confinement and at this one. Labor lasted about nine hours, with three hours between the two deliveries. Convalescence uneventful.

Case 4. Multipara; fifth pregnancy. Normal labor; convalescence uneventful.

Case 5. Primipara; normal labor. Slight tear of left labium; none of perineum. Convalescence uneventful.

Case 6. Primipara; normal labor. Left nipple sore and soft, tender swelling in left axilla, lasting two days. Highest temperature 99.4°. Convalescence otherwise uneventful.

Case 7. Multipara; fourth pregnancy. Quick labor, preventing ante-partum preparation. Convalescence complicated by irregular action of heart (chronic mitral disease). Temperature rose on the morning of the fourth day to 101.4°, but fell immediately after the bowels were thoroughly moved.

Case 8. Primipara. Normal labor; convalescence uneventful.

Case 9. Multipara; second pregnancy. Normal labor; convalescence uneventful.

Case 10. Multipara; third pregnancy. Normal labor; convalescence uneventful.

Case 11. Primipara; labor lasting about thirty-six hours. Foot presented; child delivered manually under ether. Convalescence uneventful.

Case 12. Multipara; third pregnancy. Normal labor; convalescence prolonged by slight daily hemorrhage after getting up against advice.

Case 13. Multipara; fourth pregnancy. I was called into this case by the physician in charge, to relieve him, about three hours before delivery. The second day after the labor, I discovered that two cases of diphtheria had been in the house from before delivery, and one of them had died in the room with the puerpera, who immediately developed symptoms of septicemia. By reason of the patient's refusal to submit to my directions for isolation and care, I was relieved from the case and another physician called in. The patient recovered. Her highest temperature, taken by me, was 104°.

Case 14. Primipara (delivered three days after the last patient, Case 13). Normal labor; convalescence uneventful.

Case 15. Multipara; second pregnancy. Normal labor; convalescence uneventful.

Case 16. Primipara. Normal labor; convalescence uneventful.

Case 17. Primipara. Labor retarded by early rupture of membranes. Perineum slightly torn; not repaired. Highest temperature 100.8° on the fifth day, brought down to normal by a cathartic.

Case 18. Multipara; sixth pregnancy. Normal labor; convalescence uneventful.

Case 19. Multipara; third pregnancy. Normal labor; convalescence uneventful.

Case 20. Primipara. Labor retarded by premature rupture of membranes. Perineum torn; repaired with one silkworm-gut suture. Highest temperature 100.8° on the fourth day, brought down by a cathartic.

Case 21. Primipara. Normal labor; convalescence uneventful.

Case 22. Primipara. Slight tear of perineum, dressed with aristol and later with iodoform. On the morning of the fifth day, temperature rose to 101.4°, and the nurse found that some one had placed a dirty rag soaked in sweet oil, underneath the vulvar pad, between the labia. The evening temperature that day was 102.4°, the highest reached during the puerperium. The lochia became slightly offensive and the uterus somewhat tender. She was treated with 1 to 2,000 bichloride douches b. i. d. and iodoform was dusted over the vulva. The lochia immediately became sweet again, and the temperature fell to about 100°, to rise again on the ninth day to 101°, when it was found that the vulva was intensely inflamed, and a hyperemic area extended several inches down the thighs and onto the nates. This dermatitis was attributed to poisoning by the dressings or solutions used, and all local treatment was discontinued. From this time on, convalescence progressed satisfactorily, the patient sitting up on the thirteenth day.

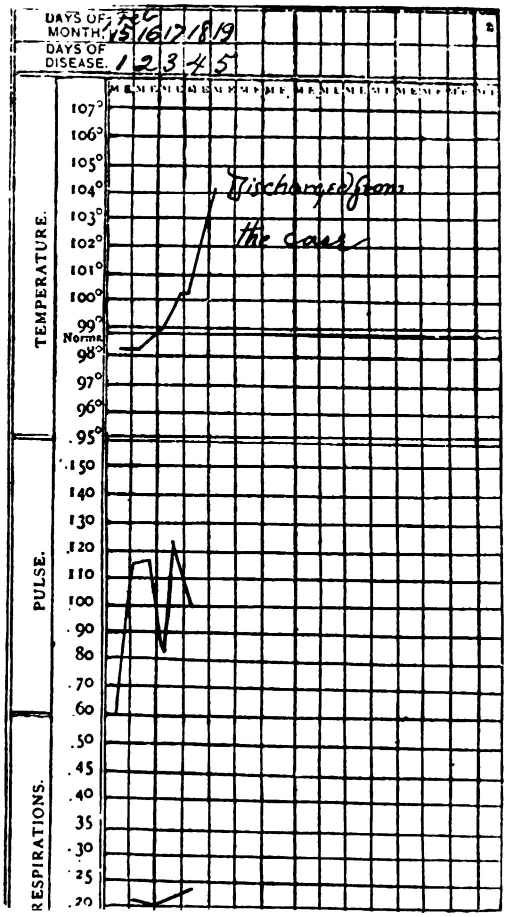

Chart of Case 13.

Case 23. Primipara. Perineum ruptured and repaired with three silkworm-gut sutures. Convalescence uneventful.

Case 24. Primipara. Labor terminated by forceps-delivery of a dead child. Perineum ruptured and repaired with three silkworm-gut sutures. Intra-uterine douche of 1 to 3,000 bichloride, followed by boiled water. Highest temperature 100.6° on the fourth day, when her breasts were giving her considerable trouble. Temperature fell after thorough evacuation of the bowels.

Case 25. Multipara; second pregnancy. Normal labor; convalescence uneventful.

Case 26. Multipara; sixth pregnancy; one miscarriage. Normal labor; convalescence uneventful.

Case 27. Multipara; seventh pregnancy. Normal labor; convalescence uneventful.

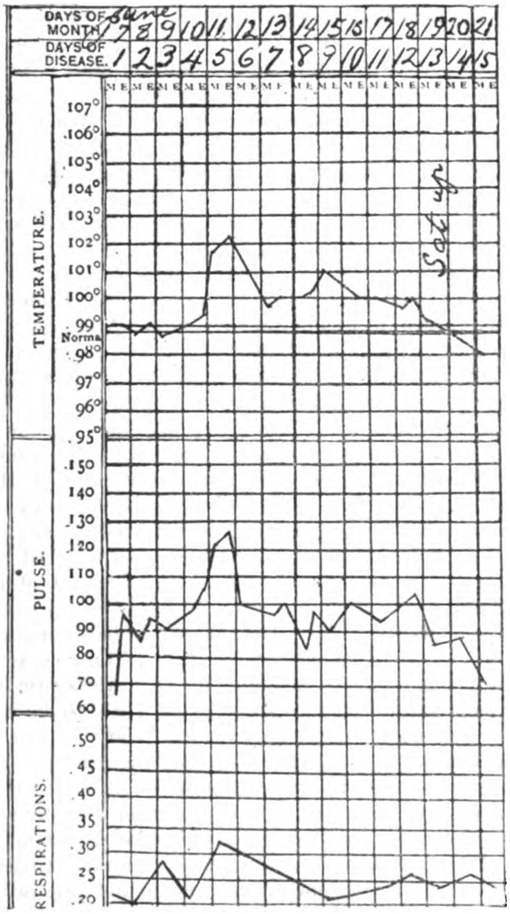

Chart of Case 22.

Case 28. Multipara; second pregnancy. Normal labor; convalescence uneventful.

Case 29. Multipara; fifth pregnancy. Normal labor; convalescence uneventful.

Case 30. Multipara; second pregnancy. Normal labor; convalescence uneventful.

A glance at these charts reveals two cases that were unmistakably septic, Nos. 13 and 22, the causes being sufficiently indicated in the foregoing notes. (Diphtheria in the lying-in chamber, in the one case, and the direct introduction of dirt between the labia, in the other.) Of the remaining twenty-eight cases the temperature rose above 100°, in No. 2 within a few hours of delivery, remaining below 100° thereafter;

and in Nos. 7, 17, 20 and 24 on the fourth or fifth day, falling in each case on the exhibition of a cathartic. In none of the other cases did the temperature rise above 100° at any time during the puerperium. So that a practical freedom from sepsis may be claimed for all except Nos. 13 and 22.

The conclusion I would draw from this study of cases is, that it is possible, by careful attention to a few simple details, to banish the severer forms of puerperal sepsis even from the homes of the very poor.

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TWO CASES OF CYST OF THE FINGER.[1]

BY F. M. BRIGGS, M.D.,
Surgeon to the Boston Dispensary.

Cyst of the finger is a great rarity, and, of the two cases which I have to report, one is apparently unique as I can find no record of any similar case; of the second case very few have been reported.

I. ENCYSTED HEMATOMA OF THE FINGER.

A female, adult, came to the Boston Dispensary the latter part of February, 1895. She had a curious-looking enlargement on the palmar surface of one of the fingers. It was firm, non-fluctuating and slightly painful on pressure. The patient stated that two years previously she ran a sharp piece of tin into the finger at this point, that she pulled it out, and that so far as she knew, it all came out. The finger immediately swelled up, and this swelling had never gone down.

I made a short cut through the skin, exposed a cyst wall, and by pressure a small bean-shaped cyst came out. It was white and glistening, and upon cutting it in halves, showed a thick cyst wall surrounding an almost black, soft, solid mass, suggestive of some form of altered blood.

Dr. W. F. Whitney reports as follows regarding it: "The tumor was of a cystic character, about the size and shape of a small bean. The interior was filled with a very dark, granular material, and the wall was of cartilaginous density. The contents were made up of granules of coloring matter (altered blood pigment) and irregular scaly fragments. The wall was an extremely dense, fibrous tissue with an occasional nucleus. The diagnosis is a small encysted hematoma."

II. EPIDERMOID CYST OF THE FINGER.

A male, adult, age forty-two, presented himself in the early part of March, 1895, with a large swelling of the terminal phalanx of the second finger on its palmar surface. It was tense, fluctuating, slightly painful on pressure and of irregular shape. The history was very unsatisfactory and of no diagnostic value. I injected cocaine, and upon withdrawing the needle a few drops of milky fluid followed it.

I made a V-shaped flap, under which I found a cyst wall, which was not adherent to the skin but was firmly adherent to the tendon. It came away with great difficulty, and in removing it the contents were lost. They were milky, and contained some greasy-looking particles, but nothing cheesy. The cyst measured two inches in circumference, and five-eighths of an inch in diameter.

At the next visit the man gave a history of the finger. He said that sixteen years previously he had a felon with complete healing and nothing noticeable afterwards. That six years ago the finger was crushed, and after it healed it was somewhat enlarged. That his attention was called to its increasing size about three weeks previously, when it was very painful and the skin over it was reddened.

Dr. Whitney's report is: "The growth was a cyst the size of a large cherry (17 mm.), the outer surface quite smooth, and the inner roughened and covered with adherent scaly masses. The wall was of firm consistency. Microscopic examination showed the wall to be made up of an outer layer of more or less flattened epithelial cells, which were gradually transformed into flat lamellated scales, and from their deeply staining with picric acid gave evidence of a transformation into a horny substance. In the part examined nothing but this epidermoid growth was found. The diagnosis was an epidermoid cyst."

Epidermoid cyst of the finger has been variously called dermoid, dermal, epidermal, implantation and traumatic epithelial cyst. I find 18 reported cases. Garré of Tübingen, who reports two of them, states that 29 such cases have been reported previous to 1894. The first case of the kind of which I find record was reported by Rizet in 1866.[2]

Of the 18 cases which I have personally found reported, 11 are in France, four in England, two in Germany and one in Switzerland. I find none reported in this country.

The condition is evidently a very rare one. It is certainly a very interesting one. The gross appearance is that of an ordinary wen. But there are no sebaceous glands in the palm of the finger; the cyst wall of a wen is composed of fibrous connective tissue and has nothing resembling the structure of the skin.

One theory is that these cysts are true dermoid and that in the cases where they occur there was an embryonic inclusion at this point. But they have never yet been found in children and seldom at puberty. They usually occur in adults. No case has been reported containing hair, teeth, nails or other of the contents found in dermoid cysts. Plastic heterotopia, or formation of tissue in unusual places, has also been advocated as the explanation. It seems to me that this is not an explanation.

It is a noteworthy fact that in all cases the cyst follows an injury of the affected finger. It is also to be noted that the wall of this cyst is skin-like in structure. These two facts have led to the belief, in which the writer concurs, that these cysts are due to preceding injury in which a fragment of skin is forced in and transplanted subcutaneously. This theory is made highly probable by the experimental work of Kaufman,[3] who implanted fragments of epithelium under the skin of guinea-pigs and found cysts forming in two weeks.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, April 3, 1895.

[2] Included in Lalitte's series. See references.

[3] Virchow's Archiv, 97 Bd.

The one argument against this theory is that if this is the explanation, if they are the result of an injury, epidermoid cysts would be much more common.

I have been very much interested in looking up the subject to see if any satisfactory answer has been given to this question, for it was what first occurred to me when I found the traumatic theory advanced. But I have found none, and at the same time feel convinced that we have here the true explanation of the condition.

In the absence of proof, one theory is, of course, as good as another. I advance a theory which may account for the very great discrepancy between the vast number of finger injuries and the fact that in the past thirty years only about thirty of these injuries have been followed by epidermoid cysts:

A fragment of skin may be very frequently carried in at the time of the injury, but it is almost invariably either killed by the injury or is disposed of in the healing process. But, once in a great many thousand times, this fragment retains its vitality, becomes engrafted on the subcutaneous tissues and after a dormant period of, usually, from four months to two years the cyst develops.

The point is made by some writers that these cysts are invariably attached to the under surface of the skin and are always free from the deep tissues. This is by no means a fact. The case which I report was not adherent to the skin, but was firmly adherent to the tendon. One case reported by E. C. Stabb in 1890 was adherent to both the skin and the tendon, and a second case by the same writer was not attached to either the skin or the tendon.

Epidermoid cyst of the finger, therefore, is a cyst which follows, and is probably due to, an injury of the affected finger. It may develop in a few months, but, as a rule, cannot be demonstrated under one year, and often does not enlarge to any extent for several years after the injury.

It is probably the result of an engrafting on the subcutaneous tissues of a fragment of skin, which is carried in at the time of the injury, and which retains sufficient vitality to withstand both the immediate effect of the injury and the later efforts of nature to dispose of it.

The resultant cyst may be adherent to the skin and the tendon, to either alone, or to neither.

A diagnosis can only be made by the microscope, where a section of the cyst wall must show a resemblance to true-skin structure. This is usually epidermal in character, but is, exceptionally dermal, and shows not only an epidermoid structure, but also the structure of the cutis vera. Sebaceous glands and hair follicles are not found.

In some cases the skin structure is seen in an inverted order; that is to say, as in the case here reported, the horny layer is on the inside. In others no such inversion is present. The contents are milky, cheesy, or both.

Regarding its name, epidermoid is the best general definition of the condition, for although some of the cases have shown more than an epidermal layer, most of them contain only the structure of the epidermis.

If it is granted that they are due to an injury, the term traumatic is superfluous; and if it should be proved that they are not due to injury, it is erroneous.

Regarding the theory which I have already referred to, that they are true dermoids and due to embryonic inclusion, I will further say that one such case as the one I report is strong evidence against such a theory, for the wall of congenital (inclusion) cyst does not show an inversion of the dermal structure.

The only treatment is removal, and in operating, the sac should be carefully dissected out, for recurrences have been reported.

Regarding other forms of cyst of the finger, I find one case reported[4] where a cyst wall formed about a needle broken in the finger three years previously.

I do not know whether molluscum ever occurs here, but if it does it can be easily distinguished. It is in the superficial layers of the skin from which it projects. It is never subcutaneous.

Sudoriparious cyst is referred to by a few writers, but as they simply speak of it as a possible occurrence and give no data, it can be disregarded. In any given case the microscope would show a different structure of the skin wall.

Similarly of synovial cyst. If found in the finger, the wall is not epidermoid in character, and, moreover, the contents are those of ganglion and bursa in other locations.

Pearl tumor (cholesteatoma) is a small, round tumor, with pearly exterior, which is said to be due to superimposed layers of cholesterin on its external surface.

Councilman[5] says: "It is essentially a tumor of the cerebrum but may occur elsewhere. The tumor is composed of cells resembling the horny layer of the epidermis. It is often surrounded by a well-defined capsule. When cut into, it is whitish yellow, and of the consistency of wax. Some authors regard them as dermoid cysts, but they never contain dermic structures, nor has a true epithelial structure been seen in the cyst which sometimes surrounds them."

From this description it will be seen, that if found in the finger, the microscope would distinguish them from the class under consideration.

In conclusion, it can be stated that cyst of the finger is an extremely rare condition; that the most common are the epidermoid cysts, but that isolated cases of other forms are reported, such as that of Kummer (the needle in a cyst) and the other one which I report of a blood cyst; that they are of interest on account of their infrequency and of importance on account of their location, for they hamper the free use of the finger. Free use of the finger is indispensable to the hand, and the value of the hand to the individual needs no comment.

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[4] Kummer: Revue de Chirurgie, Paris, 1891, xi, pp. 670–675.

[5] Reference Hand-Book of the Medical Sciences, vol. iv, p. 138.

Clinical Department.

SURGICAL CLINIC AT THE MASSACHUSETTS GENERAL HOSPITAL BEFORE MEMBERS OF THE MASSACHUSETTS MEDICAL SOCIETY.

Tuesday, June 11, 1895.

REPORTED BY M. H. RICHARDSON, M.D.,
One of the Visiting Surgeons.

EXHIBITION OF PATIENTS.

Case 1. Traumatic hydronephrosis. Dr. Porter.

George E., aged twenty-six, on November 1, 1894, ten days before his entrance to the hospital, while lifting a barrel, felt something give way in the right side. He was seized immediately with sharp pain, which soon became localized in the left hypochondrium. This was followed by vomiting and the passage of a bloody stool. The urine contained blood, pus and casts. On examination a dull and elastic tumor was found in the umbilical region extending into the left flank. The tumor at this time was punctured with the aspirating needle without result. He was then discharged, but soon after re-entered the hospital for pain and a sudden increase in the size of the tumor. Examination of the blood showed a leucocytosis of 27,000. The skin was yellowish in color. He was tapped twice, and fifty ounces of fluid containing urea were withdrawn. The sac immediately refilled. On December 6th, five weeks from the receipt of his injury, a median incision revealed a large fluctuating tumor extending from the brim of the pelvis up to the renal region. This sac was opened and drained by a lumbar incision, the anterior cut having been first closed. The lumbar wound healed, except for a fistula which discharged urine equal to the amount discharged *per urethram*. It was decided that there had been a ureteral wound, and an operation for its relief was undertaken. Guided by the fistula, a lumbar incision was made, and finally extended downwards nearly to Poupart's ligament. The adhesions and inflammatory tissue prevented the finding of the ureter. It was thought unwise to prosecute the operation further. The large wound was closed, except in the upper part for drainage. The quantity of urine from the fistula and from the bladder varied from day to day, sometimes the one, sometimes the other discharging in excess. Finally the amount from the fistula diminished, and apparently there was recovery of perfect health. The patient left the hospital, passing a catheter through the fistula every few days, withdrawing a varying amount of urine. The man is now at work in the same condition.

Case 2. Cholecystotomy: removal of stone from the common duct. Dr. Porter.

Mary S., aged thirty-five, entered the hospital in February, 1893. For six months she had had hepatic colic, with nausea and vomiting. Persistent jaundice with clay-colored stools and pigmented urine soon followed. She has had attacks similar to the above every two weeks, and has been obliged to give up work. While in the hospital she had another attack similar to the first. Examination showed an induration in the region of the gall-bladder. On February 25, 1893, a contracted gall-bladder was exposed and a stone detected in the common duct. After the removal of this stone by incision of the duct she made a very good recovery. The pain and jaundice disappeared entirely, and she was discharged from the hospital on March 30th, at the end of five weeks. She is now in perfect health, and has had a baby since the operation.

Case 3. Floating cartilage removed from the elbow-joint. Dr. Porter.

Allan McD. entered the hospital October 10, 1894. Two months before entrance, while lifting a plank, he injured the elbow. He continued at his work, but at times the joint would lock at right angles, further extension being impossible. Manipulating around the triceps insertion would apparently displace something, and the joint would recover its normal position. No moving body could be felt. An incision was made at the outer side of the triceps tendon into the joint, from which a loose cartilage was removed. Upon exploring the joint with the finger a second cartilage was found lying in the olecranon fossa, thus explaining the limitation to extension. At the present time the man has perfect use of the elbow-joint.

Case 4. Ruptured middle meningeal artery: trephining. Dr. Porter.

John A. R. entered the hospital November 8, 1894, having been thrown from a carriage one hour previously. He was so stupid on entrance that he could not be roused. There were three scalp wounds; one over the right frontal bone, one over the right parietal, and a third over the left portion of the occipital The respiration and pulse were good. There was bleeding from the right nostril; neither paralysis nor spasm were present. A fracture with depression was found at the anterior wound, one inch back of the external angular process, with a crack running antero-posteriorly.

Operation was performed immediately. The dura was found dark, tense, and bulging. There was extradural hemorrhage from the middle meningeal. On opening the dura, blood under great tension spurted out. The dural opening was enlarged, clots and disorganized brain substance were removed, and no source of intradural hemorrhage was found. The bleeding ceased, and the dura and outside wound were closed without drainage. He was delirious and restless for two weeks after the operation. It was nearly six weeks before his mental functions were sufficiently restored for him to appreciate his situation. He was discharged in two months, much improved. Present condition: he has no headaches; he has good physical vigor; there is slight hesitation in speech. He states that he is well enough to return to business, but his friends advise a longer vacation.

Case 5. Floating cartilage removed from the knee-joint. Dr. Porter.

Julius J. entered the hospital November 30, 1894, having had trouble with his knee for six years. At first, every two or three months, the joint would get caught and fixed so that prolonged manipulations would be necessary before he could flex and extend the leg freely. These symptoms increased in frequency and in severity. On examination an effusion into the knee-joint was found, with a freely movable body. On December 1st the left knee was opened and one floating cartilage was removed. He was discharged December 19th, cured. The knee at present is perfectly good. The patient is able still to catch a floating body in the side of the joint, but it never gets caught between the bones.

Case 6. Nephrotomy for renal stone. Dr. Warren.

This patient had suffered since early in life with calculus of the kidney. The principal symptom was intense pain, shooting into the groin from the right kidney. A year ago I performed nephrotomy. The kidney was exposed through an incision made in the lumbar region. On passing my hand into the abdomen I grasped the kidney and brought it up into the wound. While holding the kidney my thumb and finger were deep into its pelvis, and there I felt this calculus. To expose the stone and to deliver it, I made a cut through the dorsum of the kidney in the median line, thinking that I would get less hemorrhage in this way than in any other. I could use only one hand in making this cut, as I was holding the stone with the other. I passed the knife into the kidney until it grated upon the stone. The hemorrhage was really quite appalling; it was more venous than arterial. I plugged the vessels by putting my finger into the hole made by the knife. After taking out the stone a little gauze was passed as far as the pelvis. Since the operation, from which he made a very satisfactory convalescence, he has been in excellent health, and has suffered no pain.

CASE 7. Trephining for epilepsy. Dr. Warren.

Fourteen or fifteen years ago this man received a pistol shot in the head, the missile piercing the orbit and becoming lodged in the base of the brain. Some years afterwards he began to have epileptic seizures, each attack preceded by peculiar symptoms of the right hand. The starting-point of the spasm was localized in the left fissure of Rolando. These epileptic seizures got to be more and more troublesome. In falling he dislocated his humerus in one year no less than seven times. I trephined over the left Rolandic fissure near the occipital protuberance, and from this point cut through the temporal bone with rongeur forceps nearly to the external angular process in front of the zygoma. On exploration a large quantity of serous fluid was evacuated from a cyst that was situated beneath the quadrate lobe in the left anterior fossa of the brain. He recovered from the operation without serious incident. You will see that the fingers of the right hand are kept in a peculiar position of partial extension. His father says he has not been relieved by the operation. He continues to have fits, though less frequently than before. He has dislocated the shoulder five times since the operation. The interesting point is that these very extensive operations for epilepsy do not seem to produce as definite results as we had hoped. You will notice the enormous depression under the scar, and that the brain has not filled up again since the last operation, which took place about six months ago. Surgeons dwell on the importance of the post-operative treatment of epilepsy, for even after operation the habit of epilepsy remains. We ought, therefore, to supplement the operation by a very thorough course of the bromides.

CASE 8. Cancer of the breast. Dr. Warren.

You know how much attention is devoted to the operative treatment of cancer. At the last meeting of the American Surgical Association this was the principal topic of discussion. The latest results following operations for cancer have encouraged the hope that we may be able to cure a certain percentage of cases in localities hitherto regarded as inoperable. In cancer of the breast we have been doing more extensive dissections than ever before. The so-called completed operation having been substituted for the old method, a thorough dissection of the axilla is now the rule in every case, whether glands can be felt there or not. The breast is now removed with the pectoralis major and the contents of the axilla in a single mass. We are doing bolder and bolder operations. In the case that will be shown presently I have done not only the completed operation, but I have removed both pectorals, have resected the clavicle, and explored the supra-clavicular space.

Mrs. B., aged fifty-two, noticed six months before entrance to the hospital, a small lump in the left upper quadrant of the right breast, about the size of a small orange. The skin was not adherent. Glands could be felt in the axilla. The breast was removed February 5, 1889. Microscopic examination by Dr. Whitney proved the diagnosis schirrous cancer. I have not seen her for six years. The scar of the incision, as you will see, is smooth, non-adherent, and soft. There is not the slightest evidence of a recurrence locally or remotely. The pectorals were not removed in this case. The incision was carried well over to the upper arm, so that a very thorough dissection of the axilla could be made.

There are quite a number of cases as favorable as this. I have found 27 per cent. of cures in my own practice. Of course there are a good many cases that I have not heard from, but the outlook is certainly very encouraging.

CASE 9. Cancer of breast; completed operation; removal of pectorals; dissection of axilla; resection of clavicle and exploration of supra-clavicular space. Dr. Warren.

This patient, a woman of forty-five, I have asked to call in order that you may see the extent of the incision in the modern operation for cancer of the breast. The cut is carried up here across the axilla to a point well beyond the posterior axillary fold (*latissimus dorsi*). The *mamma* with the pectorals are first cut away; the fat and glands are then dissected from the axillary vessels in one mass with the breast and the pectorals. The clavicular portion of the *pectoralis major* is left intact in most instances. In this case the clavicle was divided so that a clear view could be had of the sub clavian triangle. It was possible to make a most minute and satisfactory dissection of the whole region from the outer fold of the axilla to the bifurcation of the innominate artery; to remove every suspicious gland and to explore all doubtful places. The dissections having been completed the clavicle can be wired, as in the case before you. In a recent dissection I went as high as the seventh cervical vertebra.

CASE 10. Resection of the jaw for anchylosis.

Dr. Cabot showed a boy of thirteen upon whom he had operated three years before for unilateral bony anchylosis of the jaw, which was the result of otitis following scarlet fever. The operation was a cuneiform resection of the neck of the jaw through an incision just beneath the zygoma. The boy can open his mouth one and three-quarters inches, and the jaw has lateral, grinding motion of three-quarters of an inch. The scar is almost invisible and there is no paralysis of the facial nerves.

CASE 11. Jacksonian epilepsy.

Dr. Cabot showed a young man who had been cured by operation of Jacksonian epilepsy, the result of a cyst of the brain. The case will be more fully reported later.

CASE 12. Fractured thigh. Dr. Cabot.

A fractured thigh under treatment in an ambulatory manner on a modified Taylor's hip splint. The modification consists in adjusting to the splint bands which surround and support the thigh within which coäptation splints are applied, so as to give thorough support to the bone. Dr. Cabot said that he had already used this method in three cases with very good satisfaction, one of them being a case in which all other apparatus had been tried and had proved unsatisfactory on account of the restlessness of the patient, and in which this splint, which was first adjusted to that case, had worked admirably, giving extension and coäptation in a thoroughly satisfactory manner. In the case shown to the Society the splint was applied at the end of four weeks, which time the patient spent in bed with a Buck's extension. Dr. Cabot said that he would have preferred to apply the apparatus and get the patient up earlier, but there was delay in having the splint made. He thought that these cases might be got out of bed easily at the end of a fortnight, and after that they might get about on crutches.

Case 13, shown by Dr. Cabot, was a man who had been operated upon for the radical cure of inguinal hernia by an original modification of the method devised by Halsted, and in a somewhat different form by Bassini. By Halsted's method the cord is transplanted towards the anterior iliac spine and brought directly through the muscular wall and the aponeurosis of the external oblique. Bassini, in the effort to restore the valvular arrangement of the canal, carries the cord downward between the muscles and the fascia of the external oblique, making a slanting canal much like that which nature has provided. Dr. Cabot, in the case shown, had brought the cord through the internal ring, after strengthening the upper borders of that canal by one or two tendon sutures, and had then carried it upward between the muscles and the fascia of the external oblique, to emerge through said fascia at the point where it would emerge by Halsted's operation. The ring and the canal below were then sutured firmly, and closed as in Halsted's method. It seemed to him that if it were found wise to make the emergence of the cord through the wall by a slanting canal, that a canal slanting in this manner upward, was much less likely to be forced open by downward pressure of the bowels than one which imitated the natural canal, as in the method of Bassini.

Case 14. Resection of four feet of intestine for mesenteric thrombosis.

Dr. Elliot showed a patient in good health, from whom he had resected four feet of small intestine about a year previously. The patient had suffered from very acute abdominal symptoms, and on opening the abdomen a large knuckle of intestine was found dark and gangrenous. After the resection was made the ends of the gut were sewed into the abdominal wound making an artificial anus, which was subsequently closed by another resection. Examination of the part removed showed it to be one of the very rare cases of thrombosis of the mesenteric veins.

Case 15. Incision of common duct; removal of gall-stone; suture of duct. Dr. Elliot.

The patient was shown in robust health. About a year ago he had had a gall-stone removed from his hepatic duct, on account of the following symptoms: gall-stone colic, severe pain, jaundice, clay-colored stools and vomiting. The stone was located by touch. The duct was incised over the stone and closed with sutures immediately after the removal of the stone. Recovery was rapid. This is the only case on record in which the hepatic duct has been closed with sutures after extraction of a stone.

Case 16. Osteoplastic operation for anchylosis of the jaw. Dr. Elliot.

The patient, a boy of twelve, had had complete anchylosis of the jaw since he was ten months old. He was emaciated, with a small, undeveloped jaw. One year ago the ramus of the jaw was divided on both sides. The jaw was constantly moved, and finally good motion was established. The patient can eat well, and has gained in weight.

Case 17. Removal of the Gasserian ganglion for neuralgia. Dr. Mixter.

Martin Z., aged forty-five, without premonitory symptoms was seized in 1880 with violent jumping pain in the terminals of the right trifacial nerve. During the next six years he had complete remissions of pain for months at a time. At the end of six years the infra-orbital nerve was avulsed without relief. A year later the inferior dental was removed by trephining through the ascending ramus of the jaw. Three years' relief followed this procedure. In 1891 Dr. Mixter operated at the foramina of exit from the skull, avulsing the second and third divisions. One year's relief followed. Since that time the pain has been constant. September 18, 1894, the Gasserian ganglion was removed with a relief which has been thus far complete. The patient shows very little deformity, even after such extensive operations as the two last. There has been no interference with the general health, and the cerebral functions are not impaired.

Case 18. Nephrotomy followed by nephrectomy. Dr. Mixter.

A woman, aged thirty-three, for one year had had symptoms which resulted in a perinephritic abscess. The right kidney was opened by lumbar incision by Dr. Richardson before this Society a year ago.[1] A counter opening was made in the right groin. From this operation she rallied well, but she continued septic, the temperature fluctuating between extreme limits. In September, Dr. Mixter extirpated the kidney through an incision which extended from the last rib to the anterior superior spine of the ilium. After this operation, which was very successful, she regained her strength and flesh in a remarkable manner, and is now, as you see, in perfect health.

Case 19. Intra-peritoneal suprapubic cystotomy for stone. Dr. M. H. Richardson.

The patient, aged fifty-one, had suffered from urinary symptoms for four years. Operation April, 1895. The stone proved too large for the lithotrite. The bladder was exposed by the suprapubic cut; but owing to the great thickness of its walls and consequent rigidity, the prevesical space could not be utilized. The intestines were protected with gauze, and the bladder opened. The stone weighed 2,250 grains. The intra-peritoneal route, first deliberately suggested and performed by Dr. Harrington, was taken in this case by necessity. The rapid convalescence, with entire absence of peritonitis after the unavoidable contamination by the foul contents of the bladder, is another proof of the great tolerance of the peritoneum even when infected by fluids extremely septic, if efficient drainage is employed.

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[1] *Vide* Boston Medical and Surgical Journal, June 28, 1894, p. 646.

Case 20. Intra-peritoneal suprapubic cystotomy for stone. Dr. Richardson.

Operation May 27, 1895. This is very similar to the preceding case in history, operation and result. The stone weighed 1,610 grains, and had been fractured transversely in the middle at no very remote date, as was shown by the recent deposition of urinary salts upon the broken section, which was itself marked by concentric layers. The patient is still in bed, but convalescing well.

Case 21. Recurrent appendicitis; appendix removed through an inch incision. Dr. Richardson.

W. D. R., aged twenty-two, had had six or eight attacks of appendicitis. Was brought to the hospital May 21, 1895, during an appendicitis of moderate severity. The appendix could be felt directly under the abdominal wall in the usual position. He was eased through this attack without operation, and when perfectly well the appendix was delivered through an incision just large enough to admit the index finger. The abdominal muscles were divided in accordance with McBurney's recommendation, a most admirable and efficient procedure. The case is shown on the eighth day entirely healed. The approximation is so effectual by this method that the chief objection to the operation — that of ventral hernia — is fully met. The mortality is very slight, as Bull has shown.

Cases 22 and 23. Intestinal resection for fecal fistula following operations for appendicitis. Dr. Richardson.

These two cases were more or less complete resections with end-to-end suture. The bowel had become necrotic, probably from the pressure of the drainage-tubes used by the surgeons after operations upon the appendix. In both practically the entire contents of the bowel were discharged through the fistula. Following the method first used in such cases by Dr. Porter fifteen years ago, I separated freely the adhesions about the affected coil, so as to deliver it fully through the wound. The general peritoneal cavity was of course opened by this procedure, but it enabled me to bring the opening into full view, to resect carefully the ragged end of gut, and to make a perfect joint. Both cases have recovered entirely. One of them was operated upon a year ago to-day; and you may remember how difficult the operation was on account of hemorrhage.[8] This method in my hands has succeeded in every case in closing permanently the fistula. A complete circular resection is generally necessary on account of the great extent of the opening. In one case the appendix was found close to the opening in the cecum, and removed.

Case 24. Nephrectomy for tubercular pyo-nephrosis. Dr. Richardson.

Mrs. G., aged thirty, suffered from pain in the left kidney a year and a half ago, accompanied by pus in the urine. A year ago nephrotomy was successfully performed at the Massachusetts Homeopathic Hospital. The discharge from the persisting sinus contained urea. She was much emaciated when I first saw her, with a chronic septicemia. The left renal region was occupied by an immovable tumor. May 25th the kidney was enucleated through an anterior incision (that is, a little in front of a vertical line half-way between the umbilicus and the spines of the lumbar vertebræ).

Though the abdominal cavity was opened in front, most of the manipulations were retro-peritoneal. The progress has been very satisfactory. The sinus became closed immediately. The other kidney is working well. In the enucleation of the kidney, which was nothing but a bag of pus, no vessels required ligation.

Case 25. Tumor of brain weighing a pound removed from left hemisphere. Dr. Richardson.

This man, aged thirty-eight, began to show hesitation in speech last October. December 1st he gave up his business. He began soon after to lose power of motion in the right hand. This loss of power soon became complete, and involved also the leg. The paralysis was preceded by twitchings of the hand and foot. The diagnosis by Drs. Putnam and Walton was glioma in the left motor region. The first operation was performed February 14, 1895, and consisted in a superficial exploration about the left fissure of Rolando after a very large osteoplastic resection of the left side of the cranium. No tumor was detected. The flap was replaced and sutured. He recovered well, and seemed somewhat improved by the relief to the intracranial pressure. The flap united, but underneath it a large mass forced itself until three months later it projected under the scar. The second operation, May 25th, revealed at once a lobulated tumor projecting from the wound. This was enucleated with the fingers without difficulty, though the hemorrhage and shock were great. The mass filled almost completely the left half of the cranial cavity, its weight being roughly estimated by Dr. Whitney at one pound, as the fragments saved filled a pint jar. The fingers swept from the *crista galli* to the internal occipital protuberance, the whole length of the *falx cerebri*.

He has recovered practically from the operation. The enormous cavity left in the cranium has become filled with what seems to be normal brain tissue. The aphasia is much improved, while the power of motion is returning with great rapidity.

OPERATIONS IN THE BRADLEE WARD.

Case 1. Abdominal hysterectomy for fibroid of the uterus.

Dr. J. W. Elliot did an abdominal hysterectomy for a fibroid of moderate size, which was accompanied with a large amount of ascitic fluid. The ascites was found to be due to a general tubercular peritonitis. The case thus showed the rare combination of a fibroid of the uterus, with a tubercular salpingitis and tubercular peritonitis.

Case 2. Cholecystotomy. Dr. Mixter operated upon a woman of fifty-six whose first attack of gall-stones occurred thirty years ago. She entered the hospital April 22d, in the midst of a very severe attack of gall-stone colic. She was discharged April 30th, and re-entered June 4th with another attack.

The abdomen was opened by a cut parallel to the ribs. The gall-bladder was normal in appearance, though its walls were slightly thickened. The fundus was first secured by two stitches, between which an incision was then made. Five stones were removed. The common duct was then explored both inside and out, but nothing abnormal was found. The wound in the gall-bladder was next closed, and finally the external wound without drainage.

Case 3. Appendicitis in the interval of health.

Dr. Elliot did an operation for appendicitis in the interval between the attacks. The abdomen was opened by the method suggested by Dr. McBurney. The skin and external oblique were incised in the direction of the fibres of that muscle, and the internal oblique and transversalis were incised in the direction of their fibres, so that the lines of incision through the two muscles were at right angles to each other, one overlapping the other. After the chronically inflamed appendix was removed through a one-inch opening, the fibres of the muscles and the fascia fell back into place, leaving no direct opening into the abdomen. A few buried stitches were taken to hold the muscular fibres together. The method seemed to show clearly its value in preventing a hernia of the scar.

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[8] *Vide* Boston Medical and Surgical Journal, June 28, 1894, p. 645.

Case 4. Ovariotomy. Dr. Harrington.

The patient, aged sixty-five, had had an ovarian cyst weighing ten pounds removed five years ago in Pittsfield by Dr. Paddock. Recently the abdomen had become enormously enlarged, transmitting a thrill, and dull to percussion, except below the umbilicus where a ventral hernia through the old scar existed.

The bowels were found firmly adherent to the skin. The surface of the tumor was extremely tense, and the intestines were adherent to it in all directions. The adhesions were so strong that the tumor could not be enucleated without injury to the gut. The tumor was finally opened, and more than fourteen pounds of fluid evacuated from different sacs. Glass and gauze drains were left in, one drain going into interior of cyst.

OPERATION IN THE BIGELOW AMPHITHEATRE.

Case 1. Nephrotomy. Dr. Harrington. The patient, a man of twenty-nine, had had fever, chills, and night-sweats accompanied by pain in the left kidney and left groin. There was frequent painful micturition, and the urine contained pus. No tubercle bacilli could be detected. Under ether the bladder was sounded, but no stone could be found. Great temporary improvement followed rest and nursing, but there was no decisive tendency towards cure. There was a tense and painful tumor in the left renal region. By a lumbar incision two sacs of pus were evacuated. Several stones were found, weighing all together sixty-eight grains. The policy of temporary drainage was adopted, with a view towards ultimate nephrectomy.

Case 2. Retro-esophageal tumor. Dr. Mixter.

William D., aged thirty, single, shoemaker, had been well till six weeks before operation, though he had met with some injuries, and had had a venereal sore. His first complaint was difficulty in deglutition. Three weeks later he noticed a bunch in the throat which was slow in growth and painless. Respiration was very difficult and somewhat noisy. No definite outlines to the growth could be made out, but it evidently was flattening the trachea against the thyroid isthmus from behind. The mass was supposed to be situated between the trachea and the esophagus, and to extend into the mediastinum. After consultation it was decided to perform tracheotomy under cocaine anesthesia, and then to explore thoroughly the precervical region. The trachea was opened immediately and found to be so flattened antero-posteriorly that no tube could be introduced. In trying to adjust a canula inspiration became almost completely blocked. Immediate death was prevented finally by means of a gum-elastic catheter, for which later a large laryngeal tube was substituted. Through this the patient was anesthetized by chloroform, which worked most satisfactorily. The tracheal cut was carried well down towards the aorta until space was found for the introduction of the largest sized canula. The subsequent manipulations, by which an extensive encapsulated myxo-sarcoma was removed from the depths of the precervical space and the posterior mediastinum, were comparatively easy. The relief to breathing was marked. The patient recovered from the operation remarkably well.

Case 3. Intestinal resection and suture for cancer. Dr. Mixter.

Mrs. H., fifty-seven years old and a patient of Dr. Fraser of East Boston, had had for two years symptoms upon which the diagnosis of cancer of the ascending colon was based. There was loss of flesh, impaired digestion, with pain in the right of the abdomen with gurgling and squeaking, and a tumor which was tender, somewhat movable, and irregular. Exploratory laparotomy was advised, after consultation, with the chances against any radical improvement. The mass was found to be a tumor of the hepatic flexure of the colon that had sagged down towards the ileo-cecal valve. The disease was so distinctly localized that extirpation seemed justifiable. The whole ileo-cecal coil was removed after securing in sections the meso-colon. The beginning of the transverse colon was then united to the small intestine, which had been cut near the ileo-cecal valve, by means of a lateral anastomosis with the Murphy button. The cut ends were closed by continuous suture. After most careful irrigation the abdominal wound was tightly closed. The specimen proved to be an extensive ulcerated carcinoma of the large intestine.

Case 4. Nephrectomy for calcareous pyelitis. Dr. Richardson.

Mrs. X., aged forty-seven, a patient of Dr. J. A. Steadman, of Canton, had noticed a tumor in the left renal region for some six months. Her general health had become seriously impaired without visible cause. The tumor filled the left renal region, bulging posteriorly, and extending in front nearly to the median line. It was hard, and in places irregular and nodular. Posteriorly there was distinct fluctuation. The temperature indicated a mild sepsis. Aspiration showed pus. Nephrotomy was advised unless total extirpation should prove easy after exploration. A curved anterior incision was selected for the purpose of ascertaining the condition of the other kidney, and to control hemorrhage if necessary. A transverse cut was carried towards the spine, and abundant room was thus gained. The right kidney was found of normal size, shape and feel. The left was enucleated from its capsule without great difficulty though the wall was sessile to the abdominal aorta. The bleeding, which was insignificant, was from three or four very small arteries in the thickened pelvis. There was abundant foul pus and numerous fragments of a friable calculus. The whole calcareous mass weighed about 1,500 grains. The peritoneum, which was opened in places during the separation from the descending colon, was efficiently protected by means of gauze. After thorough flushing with warm water the external wound was closed, a small gauze drain being left in the lower angle of the transverse cut.

A Medical Mayor. — Dr. A. W. Fly has been re-elected Mayor of Galveston, Tex.

CONGENITAL ANKYLOBLEPHARON.

BY WM. DUDLEY HALL, M.D.,
Assistant Ophthalmic Surgeon to the Massachusetts Charitable Eye and Ear Infirmary, Boston, Mass.

Ankyloblepharon, or union of the borders of the eyelids with each other as the result of injury, is not at all uncommon and not always easy to remedy, while on the other hand, the congenital variety is very rarely seen.

It was my good fortune to have brought to me quite recently during the service of Dr. Jeffries at the Massachusetts Charitable Eye and Ear Infirmary this interesting condition in twins, it being bilateral in each child. The infants were seven days old when I first saw them, rather small but fairly well nourished, one being somewhat cyanotic in appearance, the other of good color. The right eyelids of one of the babies were connected and held in apposition by two thin and thread-like adhesions, both of which proceeded from about the middle of the palpebral border, situated one-eighth of an inch apart, while in the case of the left eyelids there was but one similar strand of tissue. Upon separating the eyelids they could be seen to possess some elasticity, but were nevertheless quite resistant. The other child had two similar bands connecting the right eyelids, one of them being broader than the other, while there was but one band connecting the left eyelids, that being quite broad and occupied the entire middle third of the border. A few snips with the scissors, and a boric-acid lotion, was all the treatment required. The friends who brought the children stated that in their father a similar condition had existed at birth, and that the grandmother had successfully divided the adhesions.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

Regular Meeting, Wednesday, April 3, 1895, Dr. M. H. Richardson in the chair.

Dr. C. A. Porter reported and exhibited a case of

EXTENSIVE DISSECTION FOR MALIGNANT DISEASE OF THE NECK, PREVIOUS TO DISSECTION TREATED BY CANCROIN.

Dr. Richardson: I have used cancroin and the toxines of erysipelas with those from the bacillus prodigiosus, as recommended by Coley, in carcinoma. My experience tallies with that of Dr. Porter and other observers, for I have failed to see any benefit whatever in the use of either for carcinoma. The result after the injections of the toxines of erysipelas and of the prodigiosus in sarcoma have been remarkable in the hands of Coley. In one case which I sent him of inoperable sarcoma of the abdominal wall there is now not only complete disappearance of the tumor, although it was very large, but at my last examination there was a hernia in the scar resulting from the exploratory incision. At the time of the operation this incision extended into the tumor through the abdominal wall, into a mass as large as a child's head.

Dr. F. M. Briggs read a paper on

CYST OF THE FINGER, WITH TWO CASES.[1]

Dr. C. B. Porter: I have nothing to say except that I have never seen a case such as Dr. Briggs reports. I have seen a few cases that seem to me more of synovial nature than anything else. I do not remember operating on one myself. I have recommended the operation. I cannot say whether they were simple synovial cysts or not.

Dr. H. L. Smith read a paper on

THE TREATMENT OF ELBOW-JOINT FRACTURES BY ACUTE FLEXION WITHOUT SPLINTS; RESULTS, WITH CASES.[2]

Dr. Richardson: I think every surgeon appreciates the importance of fractures near the elbow-joint, especially those of the external condyle implicating the joint. The results are so unfortunate, both for the patient and for the surgeon, that it seems to me we cannot have a more interesting discussion, especially when the proposed treatment is so simple, and the results so much better than those obtained by previous methods.

Dr. Abner Post: Unfortunately I did not hear the paper; but I have watched a good many of these cases with a good deal of interest; and at the risk of repeating or not bearing directly on what Dr. Smith has said I would like to say a word or two. During the past year I have had a good many cases of fracture about the elbow-joint, and I was interested to put them into a position of flexion at more than an acute angle, and I must say I have been pleased by the results. So far as I have been able to follow them the results have been extremely good. I think during my four months' service last year the children's ward had never less than two cases at a time. I must have had eight or ten such fractures, and the results I think have been universally good, and a good position was easily obtained. The question arose as to the best way of retaining fractures in that position, and my service last year went through a sort of evolution. We commenced by manufacturing a kind of T-splint which as manufactured extemporaneously was not successful. Then the fractures were put up in plaster-of-Paris which answered very well, but it was a little difficult to put on a sling which held them in comfortable position, and for some reason or other, I hardly know why — I think wishing to put one up without any preparation beforehand and possibly plaster-of-Paris not being advisable and I being in a hurry — I had recourse to the methods used by Mr. Thomas for the treatment of disease at the elbow-joint, that of simply tying the wrist up to the neck so that the arm was confined across the chest at an acute angle, kept in place simply by a bandage tied around the wrist and around the neck. That held the arm in place perfectly well, but there are objections to it as it is apt to cut the wrist and neck, and we tried to improve upon it by manufacturing a sling, and after a few attempts I found a nurse in the children's ward who manufactured a sling which answered the purpose most beautifully, and that sling has been used in several cases. Whether that position is universally applicable or not I hardly know. I should never be satisfied to simply flex the arm and leave it in that way alone, but I have been accustomed to see that the fractures were moulded into place. I have never been able to arrive at quite so ready a method as Dr. Smith has just described, but I do think that the adoption of the acute angle is certainly an advance, and perhaps as a matter of routine is the best method that I know of.

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[1] See page 7 of the Journal.
[2] See page 1 of the Journal.

Dr. Newell: This has been a most interesting paper to me; and I think it calls our attention to the fact that this method is as good, if not better, than the older and more accepted methods of treating elbow-joint fractures and injuries. It certainly is of the greatest value to all practising surgeons; and it seems to me that it furnishes all the comfort of a Velpeau bandage, in fact, it is practically putting the elbow into the position in which the arm is put in the Velpeau bandage. It seems to me that takes the weight in the way the arm is ordinarily held in the sling off the shoulder-joint and gets rid of a great deal of discomfort that cases on an ordinary angular splint usually suffer. I think the very fact that the elbow can be flexed at the acute angle is determined by the fact that the fragments must be in place in order for that extreme flexion to be brought about, so that as Dr. Post suggests, if the reduction were not readily produced, it would show that the obstructing fragment had not been put out of the way. It seems to me the sling that Dr. Post uses not only flexes the arm, but lifts the arm as much as possible and supports it like a Velpeau bandage. I should think this would prove to be a most valuable contribution to surgery.

Dr. Mumford: I should like to ask how long the arm is kept at this angle and how soon Dr. Smith begins to manipulate the joint.

Dr. Smith: I am in favor of keeping the arm absolutely still for a long period provided we are quite sure that the fragments are in exact place and everything has gone right throughout treatment. I intend in all cases to keep the arm without any movement for three weeks at least, and am inclined to believe it would be well to keep it longer. I can think of no reason, theoretical or practical, why it would be better to take an arm down and move it at the end of three weeks than at the end of four or four-and-a-half weeks, but the treatment in these cases usually has been a moderate amount of passive motion at about two-and-a-half to three weeks, the arm being gradually let down into a right-angled position, and being perhaps kept on a right-angled splint for a little while. When I have treated them myself, I have simply kept them in the acute position for about three weeks, then let them down into a sling flexed to slightly less than a right angle. I believe it is not enough to flex the arm even to what seems to be a pretty acute point. I should flex the arm of this little boy whose accident is a week old, several degrees beyond the point where it is, simply because it can be done, and it is by flexing acutely that the fragments are firmly locked. As long as the arm is carried to the limit the fragments are locked and not until then, and if any bad results have occurred it would seem that that is the reason why. Even a few degrees of loosening would allow some slipping of the fragment, and the slipping of a fragment one-eighth inch might make considerable difference in the amount of motion ultimately gained. The flexion recommended is forced flexion absolutely tense and kept tense.

Dr. M. H. Richardson presented an account of

A CASE OF ACUTE INTESTINAL OBSTRUCTION FROM THE IMPACTION OF AN ENTEROLITH; OPERATION; DEATH.

Dr. Edwin Ricketts, of Cincinnati: I feel indebted to Dr. Richardson for the able presentation of this subject for it opens up a wide field; and I am very glad that he has made mention of the Murphy button. In connection with this subject I want to present a few specimens of gall-stones, five stones representing as many operations, and the stones in this box, twenty-eight in number, were taken from another patient. These specimens are the largest that I have removed. These 28 weigh 190 grains. This stone 120 grains, and was removed three weeks ago. This stone 172 grains, this 128, this 28 and this 115. We have had our attention attracted to appendicitis. I am quite sure that in the near future our attention is to be called to gall-stones and their results. The patient from whom this stone (120 grains) was removed had been an invalid for nine years, and had not been able to take anything of diet outside of milk, suffered from diarrhea, and this stone was found down in the common duct lying directly back of the pylorus. I have never done an operation similar to the one reported by Dr. Richardson, but these stones being large I thought I would like to present them in connection with the case.

In regard to the use of the Murphy button, I think, as it opens up the subject, we can go back further and touch upon the subject of cholecystotomy. I am quite sure that the ordinary cholecystotomy in which the gall-bladder is incised and brought up into the abdominal wound, stitched into it as the pocket is stitched into the woman's dress, is the better procedure than anastomosis by the Murphy button for the reason that you have the incised gall-bladder under control and you can wash it out daily, as suggested by J. W. Taylor, until the common duct opens and when the bile is passing into the intestinal canal you can remove the tube. In making the anastomosis with the Murphy button you take the chance of tearing the gall-bladder in the passing of this button into the intestinal canal, and there are cases in which portions of the gall-bladder had been torn off as the button had passed into the intestinal canal, and there are other cases in which foreign bodies had come in contact and been entangled in the opening of the Murphy button and obstruction brought about in that way and death followed. Why it is that some stones are carried a number of years without causing a great amount of trouble is rather peculiar; and equally so in other cases where the small stones give so much trouble; in fact, the patient having this stone of 28 grains in the common duct suffered more than any of these patients possessing the large stones. Indeed, it was with a great deal of difficulty that the 28-grain stone could be dislodged; and this patient lost thirty-five pounds in flesh while the patient with the stone of 120 grains retained her flesh, surprising us all.

Dr. Newell: I was greatly interested by Dr. Richardson's case, and its extreme rarity. It seems to me it would be hardly possible that an operation that occupied only ten minutes with complications had any immediate relation to the death of the patient. I think it is impressed upon us more every day, the great loss our art suffers through the attitude of the community towards post-mortem examinations. If there had been an examination in this case there would probably have been found some other cause for death than the operation or even shock. I think all who are familiar with Nussbaum's work, on the wounds of the abdomen particularly, know that a great many cases go for a long time with from 20 to 30 or even 60 large-sized foreign bodies in the stomach or various parts of the intestinal tract without any apparent disturbance. It is probable that in these cases coincidence of unfavorable conditions gives rise to irritation and inflammatory complications that make them serious or fatal.

Dr. E. W. Cushing: I think that it is very fortunate that Dr. Richardson has called attention to the phenomena of contraction of the intestine, the suddenness with which it may occur and the violence with which it may occur. Those of us who saw the demonstration by Dr. Morris on the rabbit at Toronto last summer, were very much impressed by seeing that a slight crystal of carbonate of soda laid on the exposed intestine of a rabbit will cause contraction to occur sufficient to shut the lower part of the intestine up almost into a cord, which is then drawn into the upper part until complete intussusception of one-half to three-fourths inch occurs, so that we can see before our eyes the phenomena of intussusception; and I am very sure that a good many deaths which occur after abdominal section, are primarily due to some phenomena of irregular contraction of the intestine commencing a stoppage or forcing the intestine into some position in which it gets a kink and cannot recover itself, the peritonitis which may come on afterwards being rather secondary and due to distention, than primary and due to infection at the time of the operation.

In regard to the Murphy button; speaking offhand, it seems to me the size that is meant for use in the small intestine is smaller than I should estimate the calibre of the stone. It is also a good deal smoother, and yet it is something to be considered whether it is safe to leave a thing of that size in the intestine where it might certainly give rise to obstruction by contraction. I do not remember that that particular form of bad result has occurred in any considerable number of cases. I think we all appreciate the great importance of the subject and the care with which Dr. Richardson has worked it up. I think the profession is under obligations to Dr. Richardson for steadfastly publishing these fatal cases. If there is anything which surgery is in need of at the present time it is what has been facetiously described as the *alethometer*, an instrument for recording the truth of reported cases. I have had occasion to know how hard it is to find any one who will report his fatal cases. We have long runs, brilliant successes, all sorts of things except deaths, reported; and the man who is willing to give us the true results and the bad results, and who is willing to stand up and do this work, displays a quality coming very near moral heroism, as things go to-day in surgical matters.

Dr. Ricketts: I should like to know Dr. Richardson's views as to the causative relations between gallstones and cancer of the common duct.

Dr. Richardson: With reference to reporting fatal cases, I think that some of the most instructive and interesting work we do is in connection with those desperate cases in which death is naturally to be expected. If one reports all cases that belong to this class, he must have a large mortality. Failure to record disasters leads to error in estimating dangers and to disappointment in ultimate results. The subject of gall-stones has interested me for a long time, and I have operated in a good many cases. I have never seen a gall-stone removed from the bladder during life as large as those which Dr. Ricketts has just shown. The case I have reported is an illustration of the importance of immediate operation when gall-stones makes their presence known. I believe fully in the early operation, when the calculi are in the gall-bladder: first, because the operation is much more difficult when the stone has become impacted in the common duct; and, secondly, because prolonged cholemia makes the chances of recovery even less, the patients frequently dying of exhaustion after so late an operation.

I believe that gall-stones are a common cause of cancer of the gall-bladder. I have removed gallstones successfully and have seen the patients die within a year or two of cancer of the gall-bladder. The danger of cancer, the danger of cholemia, the danger of impaction in the common duct, and, finally, but very remotely, the danger of ulceration and impaction in the intestine, all these make me a firm advocate of early operations upon the gall-bladder. Another very important reason is that in the early operations for gall-stones we have a dilated gall-bladder upon which operations are very easy and safe. When possible I use the method described by Dr. Ricketts, but I have not been fortunate enough often to find the gall-bladder sufficiently distended to apply it. In more than half the cases the gall-bladder has been contracted upon the stone, so that we have had to face the problem of draining extensive extravasations of bile from the depths of the abdominal cavity, and that without any method of controlling the flow except by means of gauze. The prognosis of such cases is good unless the patient is exhausted by prolonged pain and jaundice.

With reference to the pain, in the case reported tonight I took the history very carefully, and inquired particularly about it. His reply I have given verbatim. There was no pain except as stated. Gallstones may even fill the gall-bladder without causing pain. As to the passage of foreign bodies through the alimentary canal, I had supposed that once through the pylorus a solid body could pass easily to the anus. I never had seen impaction except at the pylorus, the cardiac orifice, or the esophagus, and at the anus. There was no reason for the obstruction except that the small intestine was spasmodically contracted around the calculus, thus stopping the passage of the intestinal contents. Beyond the point of impaction the bowel was completely collapsed.

I do not wish to say anything against the Murphy button, for it is very ingenious and rapidly applied and it has many advantages in certain cases, yet we must find the truth about it. I have used the button but three times; once in a gastro-enterostomy, and twice in lateral anastomosis between the cecum and the sigmoid flexure,— twice in the same patient. The gastro-enterostomy died from extravasation through the gastric attachment of the button. In one case the button has never been passed. In this instance at the end of a few months the anastomosis was completely closed, so that it was necessary to operate again. There was no opening whatever found between the cecum and the sigmoid flexure at the second operation. The patient has remained very well since the last operation, in February. The point that I intended to emphasize in connection with the Murphy button was that the enterolith or gall-stone in my case was no larger than the ordinary Murphy button, and yet it was caught and held in the intestine firmly enough to produce a fatal obstruction.

Dr. Ricketts: As Dr. Richardson referred to the causative relation of gall-stones and cancer of the common duct, there is one case I have just had I should like to mention. A gentleman, fifty-two years of age, consulted me four weeks ago, who had been losing flesh rapidly and who gave a history of gall-stone colic at intervals for more than three years. The pains were never so severe as to require an opiate. The question came up as to what was the trouble, and I advised exploratory incision, and found a gall-stone in the gall-bladder and cancer of the common duct and of the pancreas. Of course, an attempt to do cholecystotomy was not considered and the wound was closed. Death occurred ten days later. My assistant, Dr. W. B. Robinson, removed the liver post-mortem, and a strange condition of things was found, cancer of the pancreas was found, cancer of the common duct, a distended gall-bladder and in that gall-bladder is one stone having facettes. The history of the case, attacks of pain for three years, shows undoubtedly that the stones had passed, as I said, morphia not having to be resorted to, and the solitary stone remaining, that has facettes, goes to prove in my mind at least, with the cancerous condition found, that the gall-stone with facettes antedated the cancerous condition.

PATHOLOGICAL SPECIMENS.

Dr. Richardson: I show here a multiple fibroid removed yesterday by abdominal section. The tumor was separated from its attachments by careful ligation of the broad ligaments with the ovarian and uterine arteries. The cervix was left, having first been covered carefully by peritoneum. The prognosis seems good, yet in my experience the results of this operation cannot be predicted with certainty. The most difficult and unfavorable hysterectomies may recover without a bad symptom, while the simplest and most favorable ones may die. The chief cause of regret in the latter event is that one cannot demonstrate his error in reviewing his technique.[3]

The second specimen is a fibroid associated with an abscess in Douglas's pouch. The case was seen as an emergency, and an operation was performed at once. Attempts at draining the abscess had been made some days previously, but they proved unsatisfactory. The operation was performed without incident, but it had to be done with great rapidity on account of the alarming condition of the patient. The woman died at the end of a few hours. The association of fibroids with pelvic abscess is rare in my experience. The combination has been most unfortunate, for death has followed in every instance, whether operation was performed or not. There may be cases of fibroid in which this complication is not serious, and in which the prognosis is not unfavorably affected; but if, as in my cases, the opposition to operation is prolonged until the patient is brought to death's door, one must expect a large mortality, especially if the complication is a septic one.

The next specimen is a symmetrical fibroid removed in the stage of extreme exsanguination. The tumor was small — not larger than an orange — but the source of an exhausting hemorrhage. The operation did not last over fifteen minutes, and not a teaspoonful of blood was lost. Recovery was speedy and satisfactory.

Hysterectomy by the vaginal route seems to me preferable when the uterus is small and movable, and when the disease is such that one can cling closely to the uterus in his dissection. When extra-cervical infiltration is suspected, as in cancer, or when the difficulties appear greater by the vaginal method, I prefer the abdominal incision. By either method the results have been good, with very rare exceptions, in my experience. The rarity of fatal complications, nevertheless, gives me, for one, little confidence in a given case, no matter how favorable it may be, for, as already stated, death without perceptible cause may follow a most satisfactory operation upon a perfectly healthy patient.

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ASSOCIATION OF AMERICAN PHYSICIANS.

Tenth Annual Meeting, Washington, May 30 and 31, 1895.

(Concluded from No. 26, p. 649.)

FRIDAY. — MORNING SESSION.

EXHIBITION OF A CASE OF ALBUMINURIC RETINITIS CONSEQUENT UPON AN ATTACK OF PURPURA HEMORRHAGICA RHEUMATICA.

Dr. Prentiss: I bring before you to-day a patient whose history was related to this Society in 1890. He has the interstitial form of nephritis, which followed an attack of purpura hemorrhagica rheumatica, the form known as morbus maculosus. It will be remembered that in this case of purpura there was hemorrhage from the bladder, almost certainly from the kidneys at the same time, along with the other hemorrhages. Trouble began in his eyes about five months ago, and since that time his vision has been gradually failing until now we have a condition of the retina in which the yellow spot is almost entirely covered by degenerative changes, and there are a number of hemorrhages in different portions of the retina.

Dr. Osler: It is doubtful whether these cases should be regarded as purpura hemorrhagica rheumatica or morbus maculosus. This belong snaturally to the group of purpuric cases which were first described accurately by Henoch and which are regarded as Henoch's purpura and have the following characteristics: First, recurrence; year by year the patient may have attacks of purpura. Second, marked gastric and intestinal crises, which may occur without any other manifestation. Third, arthritis, which may occur alone. Fourth, hemorrhages under the skin. Cutaneous manifestations may not be hemorrhages but manifestations of erythema multiforme. They may be simply giant edemas or they may be purpura simply, or they may be urticarial purpura. Lastly, there may be hemorrhages from the mucous surfaces, and, in association with the hemorrhages from the mucous surfaces, not an inconsiderable number of cases of acute nephritis occurs. I have reported one fatal case of acute nephritis in this connection. I believe it is an entirely different form of disease from the ordinary types of purpura It is more allied to certain types of erythema multiforme.

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[3] May 24, 1895. This patient died at the end of five days with vomiting and distention. At the autopsy no cause of death could be found. There was no evidence of peritonitis, nor was there hemorrhage. Dr. Whitney's diagnosis was, "General anemia, slight fatty degeneration of the heart and kidneys, edema of the lungs."

DR. C. G. STOCKTON: I wish to speak of a young man under my care because of hemorrhages of the retina. These hemorrhages have occurred at intervals for the past four or five years. No other evidences of purpura have occurred on the body, nor has the man suffered from any arthritic trouble. He has had gastric crises, and is to some extent anemic. The case is not the result of kidney lesions; there is no albuminuria, and the kidneys seem in every way to perform their functions.

DR. D. W. PRENTISS: When this boy was brought here before, one of the members suggested treating the purpura with phosphorus. This was done with very great advantage.

A CASE OF MADURA FOOT DISEASE (MYCETOMA PEDIS),

by **DR. J. GEORGE ADAMI**, Montreal.

Report of a case occurring in a man who has lived all his life in America. Probably one of the first undoubted cases reported on this continent. The appearances during life were described, and illustrated by photographs. The results of the microscopical examinations of the lesions on the foot (after the latter had been amputated by Syme's operation) were given, and the resemblance of the lesions to those of actinomyses pointed out. A brief description of the two varieties of mycetoma — the black and the white — and of the clinical history of the disease complete the paper.

DR. WM. P. NORTHRUP, New York, read a paper on

GONORRHEAL ARTHRITIS, CLINICAL OBSERVATIONS.

Five cases were related, showing in general these characteristics:

(1) One joint (elbow or knee) affected.
(2) Fusiform swelling, indicating
(3) Periarthritic lesion, with
(4) Synovial effusion, serous probably;
(5) Soon absorbed, leaving
(6) No adhesions.
(7) Exquisite sensitiveness, with
(8) Little local heat and
(9) Little fever (100–101°).
(10) Course, four weeks.
(11) Recovering with perfect joint.

Three of these cases were associated with old or recent urethral discharge; one patient had no gonorrheal history and one woman's baby developed ophthalmia.

On the authority of Finger, Neisser, Bumm, Wertheim and others, the conclusion is justified that (1) gonorrheal arthritis exists; (2) that it is a metastasis, and is due to the presence and growth within the joint of the gonococcus, this agent finding its way thither through the blood channels, the original infection being most commonly upon the mucous membrane of the urethra or conjunctiva; (3) that a similar urethritis may be induced in animals by injections into the joint of a pure culture of virulent gonococci.

DR. W. H. WELCH: There is no question that there are distinct types of gonorrheal arthritis. There are cases in which the exudate is serous with a good deal of periarticular edema and no pus. Then there are unquestionably suppurative cases of gonorrheal arthritis. I base this on the results of bacteriological examinations. Dr. Halsted, at the Johns Hopkins Hospital, has opened a number of joints in gonorrheal arthritis, and we have had an opportunity of making a microscopical examination of the cultures. I thought it might interest the members of the Society to bring a culture from a case of suppurative inflammation of the sheath of the tendons of the extensors of the toes. This man came to the hospital not long ago, giving no history of gonorrhea. He had a somewhat diffuse swelling around the ankle-joint, which was the only part infected. This was incised by Dr. Bloodgood. He cut through a good deal of edematous tissue, which was also infiltrated more or less with fibrin. Then came the sheaths of two tendons which were distended with pus. Cover-slips from the pus showed a diplococcus with the morphology of the gonococcus, which decolorized by Gram's, thus excluding the ordinary pus cocci. These cultures, which I exhibit, are pure cultures of the gonococcus obtained from the pus of this particular case. They are on different media. We have found one medium, more or less by accident, which seems to be a most favorable one for the gonococcus. Dr. Flexner, while working with another organism, found that it grew best upon an extract made from fetal pigs. This medium proves to be a rather brilliant one for the gonococcus. I have not seen it grow on any other medium so well.

There is no pathological anatomy for gonorrheal arthritis that is convincing. Dr. Halsted is impressed with the frequency of small ecchymoses in the synovial membrane of the joints which he has opened; but he says he would not trust himself, and he has had a rather large experience, merely from the gross appearance of these joints, either before or after operation, to make a diagnosis of gonorrheal arthritis.

We have had another case which is somewhat pertinent to this line of discussion. It is one to be reported in full by Dr. Thayer, but inasmuch as this is an opportunity to see the recent specimens and the cover-slips and sections from the case, I thought he would be willing for me to present it here. The history of the case in brief runs over six weeks, three weeks outside of the hospital and three weeks in the hospital. The case was that of a woman in which the diagnosis was correctly made of acute malignant ulcerative endocarditis. At the autopsy we found most extensive vegetative endocarditis. There was on the auricular surface of the aortic segment of the mitral valve, a very large polypus-like thrombus, very firmly adherent by its base to the valve. Organization had begun; a new connective tissue had grown in from the valve into the thrombus. An embolic infarction, a very large one, was found in the spleen. The disease having lasted six weeks, as one might expect, there was hypertrophy of the right ventricle and left auricle, and symptoms of chronic passive congestion. In this case the bacteriological examination was fortunately made during life from the blood. The blood was withdrawn several days before death by Dr. Blumer, and a culture was made by mixing about a cubic centimetre of the patient's blood with agar, which gives us one of the media upon which the gonococcus is known to grow very well — a mixture of blood-serum and agar. The culture gave a large number of colonies of the gonococcus. The patient had a genuine gonococcus septicemia. So far as I know, this demonstration during life is unique. At the autopsy the gonococcus was found in large numbers in scrapings of this vegetation on the heart. This case seems to be of considerable importance with reference to the pathogenic possibilities of the gonococcus — a case of genuine gonorrheal endocarditis, unmixed with any other infection, with a general gonorrheal septicemia in which the gonococcus was demonstrated in the blood and found in it in very large numbers.

Dr. F. C. Shattuck: I think there is a general impression — and I shared it until I looked up the subject — that gonorrheal arthritis is very apt to be mono-articular. When we came to look up the cases in the Massachusetts Hospital, that impression was not borne out. Out of 64 cases the inflammation was mono-articular in only six; two joints were affected in four, while in 54 cases three or four joints were affected.

Dr. Welch, I think, must have overlooked cases, which, unless I am very much mistaken, Dr. Hughes, house-officer in the Massachusetts Hospital, has published. In three cases of gonorrheal synovitis he succeeded in making culture of the gonococcus from the blood, and in one of these he communicated the gonorrheal inflammation to a bitch by inoculation.

Some years ago, before the introduction of bacteriological investigation into this subject, I saw in one winter two cases of malignant endocarditis, one of them with autopsy, the other an undoubted case, both fatal, both following gonorrhea.

During the past season I had a case of arthritis and peri-arthritis about an elbow-joint following gonorrhea in my wards in the Massachusetts Hospital. It seemed to me that pus was probably present in or about the joint. I consulted Dr. Maurice Richardson, and he agreed with me that there was pus. The joint was opened, and nothing at all was found — simply a periarthritis.

Dr. Charles Cary: I should like to mention two cases of a different line of gonorrheal infection which came under my observation last winter. One was that of a young man who had several joints involved, those most seriously affected being the shoulders and knees. Both knee-joints were much distended with synovial fluid, as were also several of the sheaths of the dorsum of the foot. He had also gonorrheal conjunctivitis. But the point I want to make is that he had a gonorrheal phlebitis involving the femoral vein. Immediately following that case there came under my observation a young woman who had had a previous gonorrheal discharge. She had an inflammation of the femoral vein which was not to be accounted for in any other way. I thought it was due to gonorrheal infection, but there were no cultures made. The case was reported at the time as being gonorrheal.

Dr. Mason: At the request of Dr. Northrup I have had collected the cases from the records of the Boston City Hospital during recent years, and have forwarded the results to him in a tabulated form.

Dr. Shattuck alluded to the fact that the infection concerned a single joint in only a small proportion of cases. According to our experience, in about 25 per cent. only was a single joint involved; the others were multi-articular. The effusion which was present in a large proportion of cases was always serous, with one exception. In one case, which was explored and serous fluid withdrawn, in four days the joint became purulent. The boggy condition and general appearance of the joint is often very suggestive of pus, as in the case referred to by Dr. Shattuck in which an operation was performed. In the 120 cases handed to Dr. Northrup, there was but one post-mortem, which was the case which Dr. Councilman published in our last series of Hospital Reports; a case of gonorrheal myocarditis. Another patient died of pericarditis, which, in the light of experience, must have been due to the gonococcus. In a few instances bacteriological examination was of service in making the diagnosis, though most of the serous effusions which were examined in the joints were sterile. In one instance, where there was no urethral discharge, but an inflammation at the hip-joint, an examination of the blood showed the presence of the gonococci, and I am informed that one of our hospital internes working in Dr. Ernst's laboratory, has infected the urethræ of dogs from the cultures made in this case.

Dr. Adami: I would like to mention a case of rather doubtful joint disease seen in our laboratory recently, in which it was suspected that pus was present. A culture was made on glycerine agar. At the end of a week there were definite cultures of the gonococcus. Of course, the serum in this case acted as a culture medium, and not the agar. This is a simple way of getting small cultures; it is practically the same as using blood.

Dr. Roosevelt: Out of ten cases which I have collected one joint was involved in only one case. The ten cases had altogether 22 joints involved. In these cases no cultures have been made from the affected joint. In nine of the ten cases there was an unquestionable urethral discharge in which the gonococci were demonstrated microscopically, although not by cultures.

Dr. Wm. Osler: Dr. Fletcher, one of my assistants, has collected the details of 27 cases in the Johns Hopkins Hospital since its opening. Five of these are interesting because Dr. Halsted opened the joint and found in four a sero-hemorrhagic fluid, and only in one was there pus.

Dr. A. Jacobi reported

A CASE OF HYPERTHERMY,

in which the temperature went up to 65.5°C. (148° F.). The patient, an hysterical man, after being under observation for several weeks, left the hospital by himself, his temperature still very high.

Dr. W. H. Welch: I would like to call Dr. Jacobi's attention to the case, which was reported by Dr. Galbraith, an Omaha surgeon, a few years ago, in the *Journal of the American Medical Association.* In this case the temperature ran up to 171°. These are amongst the most mysterious cases in medicine. They seem to me a physical impossibility. I do not see how it is possible for the temperature of a part of the body to reach 171° or to remain at 148° for several days, without the death of the part. This is far higher than heat rigor which is fatal to muscle; it is a temperature fatal to the life of the animal cell. I have no explanation of the cases, and Dr. Jacobi will have to pardon a certain amount of scepticism.

Dr. F. C. Shattuck: This is apparently the first case reported in males. In the hurry of coming away I neglected to bring with me a chart which I have been keeping for some years, which shows a temperature of 117° in a hospital case of mine. Every possible precaution was taken to prevent fraud, and I always regarded it as probably authentic. The temperature was only maintained for an hour, when it went down again to a normal point. This was a hysterical young woman.

Dr. George Dock: Was the temperature of the urine taken?

Dr. Jacobi: That has been neglected.

Dr. M. H. Fussell: In a case at the University Hospital a man, evidently a malingerer, had a temperature of from 115° to 120° in his mouth and a normal temperature in the axilla.

Dr. Jacobi: Dr. Welch is welcome to his scepticism. He is no more sceptical than I was at the beginning of this case. The temperature has been taken with a number of thermometers. There are hundreds of temperatures in this record — temperatures in the axilla, popliteal space, rectum and urethra. They were always taken in the presence of several persons. They were taken with the patient in bed and out of bed, stripped naked and so on. There can be no mistake about the report. That a temperature should go up for a few minutes or half an hour, in hysterical patients, as in those cases recorded in the English journals, can be explained more readily; but I shared the scepticism of Dr. Welch in regard to the persistence of such high temperatures. But in the last five days of which I have the records, the temperatures ranged from 109.8° to 148°, with an average of 124° or 125°. Now these are facts. If our physiology and our theory do not agree with the facts, well, so much the worse for the undeveloped state of our physiology and our theory.

Dr. Osler: Was his abdomen very hot?

Dr. Jacobi: Sometimes very hot and sometimes not so. Sometimes there was difference between the upper and lower parts of the body.

FRIDAY. — AFTERNOON SESSION.

SOME OBSERVATIONS ON THE SPLEEN AND MARROW IN LEUKEMIA,

by **Dr. J. Guiteras**, Philadelphia.

The point to which the author called particular attention in connection with the lesions in this case of leukemia, was the peculiar mode of cytogenesis apparent in a large number of the capillaries of the spleen. Those channels in the spleen which possess a distinct endothelial wall are regarded as capillaries. Just outside the capillary wall the free nuclei, "erythroblasts," gather in large numbers. The small free erythroblast sends a prolongation through the endothelial wall, and just within the wall forms a small bud upon which the red blood-cell develops. The nuclei which give rise to this process are evidently such as are described by Löwit as erythroblasts, in contradistinction to the other cells found in large numbers in the channels of the spleen, the leukoblasts. These erythroblasts, although found in large numbers throughout the spleen, do not give rise to any red blood-cell formation outside of those along the endothelial wall of the capillaries.

A COMFORTABLE WAY OF USING COLD IN FEVERS,

by **Dr. Francis H. Williams**, Boston.

The method described consists in placing the fever patient on a rubber cloth, wrapping one or two thicknesses of coarse gauze over three-fourths of his arms, legs and trunk, then sprinkling the gauze with water and fanning to hasten evaporation. As compared with sponge baths with water at 70° Fahrenheit, this method proved more effectual in reducing the temperature in a given period of time. Evaporation of alcohol gives but slightly better results than water, and has several drawbacks. The method combines comfort, convenience and efficiency to a greater extent than most other means.

GOITRE IN MICHIGAN,

by **Dr. George Dock**, Ann Arbor.

The object of this paper was to call attention to the prevalence of goitre in Michigan and its vicinity. Goitre occurs in all parts of Michigan. It is most prevalent in the northern part, but the southern part of the lower peninsula shows a large proportion. Fifty-two reporters give a total of 477 cases. Lower animals almost always have goitre where it is common to man. The relations of goitre in Michigan are such as to make all other causes than the character of the drinking water, doubtful. The pathogenic substance in the water is supposed to be a microbe or a toxine. At Luddington, goitre has become much less frequent since the lake water was substituted for well water. The two most important indications in the treatment of bad cases of goitre are the sterilizing of the drinking water and removal to a non-goiterous district.

Dr. H. M. Hurd: The superintendent of the Kingston (Ontario) Insane Asylum wrote to me several years ago that he had found in his institution a large increase of goitre, which he supposed to be due to some local cause. A great majority of his patients came to Kingston from country districts, where they procured their drinking water in nearly all cases from wells. At Kingston, they procured the drinking water from the River St. Lawrence, and goitre developed in consequence of the change.

Dr. Wm. Osler: Not only in the Kingston institution, but also in the whole of the western part of Ontario, goitre is prevalent. It is interesting to note that in all of the regions in which the older writers describe goitre, and which are given in Hirsch, the goitre has disappeared. Every one of my correspondents from the Vermont valley and from regions in North Carolina, have denied knowing anything about it, and were much astonished to hear that those places had gone down in medical literature as goiterous localities, and appeared as such in the last edition of Hirsch's large work.

DISPLACEMENTS OF THE LIVER,

by **Dr. J. E. Graham**.

This paper contains a brief account of the literature of the subject and a short description of three cases met in the author's practice. The etiology, symptoms, diagnosis and treatment of displacements of the liver are discussed. A tabulated statement is made of thirty published cases.

CARCINOMA OF THE LIVER WITH CIRRHOSIS,

by **Dr. M. H. Fussell**.

Two cases of tumor of the liver were described, where the change was that of a trabecular epithelioma with a large amount of interlobular embryonal connective tissue and the formation of a large number of interbiliary canaliculi in this embryonic connective tissue. The cases seem to prove that the condition was the result of an irritant acting upon the connective tissue, which caused the cirrhosis, and upon the liver cells which caused the carcinoma.

Dr. Adami reported a case similar to one of Dr. Fussell's.

ON THE DIRECT FARADIZATION OF THE MUCOUS MEMBRANES OF THE STOMACH AND THE INTESTINES IN ANIMALS — DOGS, CATS AND RABBITS,

by **Dr. S. J. Meltzer**, New York.

Against all clinical expectations, the experiment on animals revealed the surprising fact that neither the stomach nor the intestines can be brought to contraction by faradization of their mucous membranes. Neither can the stomach be brought to contraction by application of one of the electrodes on the mucous membrane and the other direct on the muscular sheath of the stomach. The application of one electrode on the intestines, and the introduction of the other into the rectum, does not produce any contraction of the intestines, but kills the animal sometimes.

Dr. C. G. Stockton: The interesting paper of Dr. Meltzer confirms some work of my own done in 1890 which I reported before the State Society of New York in 1890, and published in *Gaillard's Medical Monthly* in New York City. For several years I had been using a gastric electrode, and was quite sure I had produced marked gastric movements by the internal use of the instrument, and I proceeded to demonstrate this upon dogs. The results that I had at that time were practically such as Dr. Meltzer has reported.

We must not forget that the internal use of the electrodes does increase secretion in a very marked manner. One could see the secretion pouring down the wall of the stomach. It was found to be very rich in hydrochloric acid and pepsin ferment.

It is rather unusual that the stomach should remain quiet under such stimulation when the intestine does not. I have frequently with very moderate currents stimulated peristalsis in the intestine.

Dr. A. Jacobi: I have used electricity a great deal in conditions of chronic constipation, dilated and weakened colon, and so on; and what I have noticed is more or less an absence of effect. The last half-year I have made it my business to try it on a number of patients after having given up this treatment several years go. I thought there must be something in it, but the results I have accomplished have been almost *nil*. What I have observed would, therefore, be confirmed by the result of Dr. Meltzer's experiments. I am very sorry that this is the case, for I believed that we ought to get some effect.

Dr. Meltzer: I cannot say that the experiments of Dr. Stockton are exactly the same as my own, for I do not know that they were done in the same way. My results are nearly the same for the intestines as for the stomach; and besides I have experiments which have shown the danger of stimulating the intestines by putting one electrode on the abdominal wall and the other into the rectum. I lost two animals in that way.

Dr. W. P. Northrup, of New York, then exhibited the Fell-O'Dwyer apparatus for forcible artificial respiration, and related two cases where it was used successfully.

The following papers were read by title: "Preparation of Antitoxin" and "Carasso's Treatment of Pulmonary Tuberculosis," by **Dr. H. C. Ernst**; "Milk as a Morbific and Infective Agent, with Tables of 134 Epidemics of Typhoid Fever, 73 of Scarlet Fever, and 27 of Diphtheria due to Milk Infection, by **Drs. S. C. Busey** and **George M. Kober**, Washington.

The Association elected officers for the ensuing year, as follows: President, Dr. A. Jacobi; Vice-President, Dr. J. M. Da Costa; Secretary, Dr. Henry Hun; Treasurer, Dr. W. W. Johnston; Recorder, Dr. I. M. Hays; Member of Council, Dr. George B. Shattuck; Representative on Executive Committee, Dr. Wm. Osler; Alternate, Dr. M. A. Starr.

Five vacancies in the membership were filled as follows: Dr. Henri A. Lafleur, of Montreal; Dr. Ira T. Van Gieson, of New York; Dr. Simon Flexner, of Baltimore; Dr. W. E. Fischel, of St. Louis; Dr. Frank Billings, of Chicago.

Recent Literature.

The Disorders of Speech. By John Wyllie, M.D., F.R.C.P., Ed. 8vo; pp. viii, 495; with two tables and twenty illustrations. Edinburgh: Oliver & Boyd. 1895.

Dr. Wyllie has done well to publish in this handsome volume the series of articles which during nearly three years he contributed to the *Edinburgh Medical Journal.* The work, however, does not consist, as might be inferred from such publication, of a collection of desultory or disconnected articles. It is, on the contrary, an elaborate and systematic study of the nature and development of human speech and of the various disturbances produced by defective development or disease. It is the most complete and comprehensive work on the subject that has appeared since the monumental work of Kussmaul, although, of course, less exhaustive than some of the studies on individual speech disturbances, such as agraphia or word-blindness. The author has not only been a careful student of the enormous literature of the subject, but he has enriched the work with the results of a very careful personal study of many forms of speech defect.

The first part of the book is devoted to a study of the disorders of the vocal mechanism, such as stammering, hysterical aphonia, and the troubles of professional voice-users. Stammering is due to a want of co-ordination between the oral and the vocal mechanisms, and it can often be cured by careful training in vocal gymnastics, with the help of the physiological alphabet which he gives. The study of the development of speech is based on the researches of Preyer; and in this connection the author gives many interesting studies which he made upon idiots and imbeciles. The final section, which embraces more than half of the book, consists of a study of the disorders of speech from diseases of the nervous system. The most novel and interesting features of this section are the chapters on the disturbances of speech in the different forms of insanity, and in the various affections which lead to paralysis or spasm of the vocal mechanism. The chapters on aphasia, however, although they contain nothing new except a few original cases, are remarkably clear and satisfactory.

The work treats with remarkable completeness of all the different forms of speech disturbance; its conclusions are accurate. The author is conversant with the best work that has been done on the subject; he is himself a careful observer; and his style is concise and admirably clear. Taken as a whole, we know of no better or more complete treatise on the subject since the work of Kussmaul, almost twenty years ago.

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RECENT EXPERIMENTS ON THE PARASITES OF MALARIA.

PROF. EUGENIO MATTEI has published in the *Archiv. für Hygiene*, No. 8, 1895, a "Study of Experimental (Malarial) Infection," in which he details some experiments of his own with malarial blood subcutaneously injected into healthy persons.

Into the subcutaneous tissue of the upper arm in four healthy subjects who had never had malaria, he injected varying quantities of blood taken from the veins of a patient suffering from quartan fever. The first man received half a cubic centimetre, the second one cubic centimetre, the third and fourth each two cubic centimetres.

Of the last two, one had chills and fever on the seventeenth day; and on the eighteenth small round bodies were found in the blood which were larger on the following days, developing with the characteristic pigment spots inside the red blood-corpuscles. On the fourth day from the first chill the ague paroxysm returned, with increase of the hematozoa. Finally, after two more attacks, the disease was arrested by quinine.

The same result was obtained in the case of the other patient, a healthy boy, who had also received two cubic centimetres of malarial blood. The period of incubation lasted only 11 days. The parasites found in the blood were regarded as of the pure quartan type corresponding to the type of the fever, being ameboid bodies with active pseudopodia.

In the other two cases no result was obtained, owing, as was supposed, to the smallness of the dose and active phagocytosis at the point of inoculation.

In several other instances healthy persons were inoculated with blood containing parasites associated with the irregular type of malarial fever. A robust boy was inoculated with two cubic centimetres of blood containing the characteristic semilunar hemamebæ from a patient who had been suffering for four months from an irregular form of intermittent. Incubation lasted fourteen days, when there supervened a typical irregular fever with chills and sweats, and continuing for several days till stopped by quinine. The sickle-shaped hematozoa were found in the blood. In another case, blood containing Laveran's semilunar bodies was injected into a man suffering from quartan fever whose blood contained the typical amebæ of quartan fever. After seventeen days, the small endoglobular bodies began to be seen; the fever increased and gradually there supervened the whole cycle of the irregular type of malaria, lasting for six days. After twenty-five days from the time of inoculation, the semilunar forms appeared and remained for three days, then disappearing with return of the original pure quartan forms; the patient did not completely recover for four months.

According to Mattei, it is possible for several types of parasites to exist together in the blood of a patient who has been exposed to various forms of the disease, and while only one kind may be found in the blood of the peripheral circulation, other kinds may exist latent in the deeper tissues and organs, waiting a chance of development.

Calandruccio and Bein have recently recorded similar experiments, the former inoculated himself with blood from *quartan* fever, and induced a similar fever in himself on the 18th day. After curing this with quinine, he inoculated himself with blood from a patient suffering from irregular intermittent, and after fifteen days had malaria of a similar type with the sickle-shaped amebæ. Bein made intravenous injections of blood from a tertian-fever patient, and he obtained in several instances not tertian but quotidian fever. Blood from these cases was injected into another series of patients, producing again tertian fever. The blood of both these types showed only the tertian parasites. Bein's conclusion is that both tertian and quotidian fever are caused by the same parasites in different stages of development. Mattei, however, believes that Bein had a tertian type which was either tertian simplex or tertian duplex, the one changing into the other form every twenty-four hours, but that it was a pure tertian, just as a quartan may be simplex, duplex or triplex.

Baccelli, in his laboratory in Rome, followed up these experiments of Bein and found that a tertian duplex always caused a tertian duplex, as he was able to detect both generations of the parasite in the blood at the same time.

It will be remembered in this connection that seven years ago (in 1888) Baccelli performed numerous experiments of a similar kind, and claimed results confirmatory of Golgi's theory of different parasites for different forms of intermittent fever. As far back as 1884, Gerhardt inoculated healthy subjects with blood from patients suffering from quotidian fever, and in two out of five cases obtained quotidian ague.

Marchiafava and Begnami have recently declared in favor of Golgi's doctrine of the existence of several varieties of parasites — a type for each species of fever, and accept the following varieties: The ameba of quartan fever (Golgi); the ameba of tertian fever (Golgi); the ameba of Summer-Autumn tertian fever; and the ameba of quotidian fever. The pernicious types of fever are caused only by the last two, and the character of the attack is explicable by the biology of the parasites.[1]

Trousseau taught that the type of the fever depends more upon the locality in which the individual lives than on the condition of the person himself. The human system does not change the morphology or the biology of the parasite. It is found that in certain localities the same type of malarial fever always occurs. Thus, in one place in Sicily only the quartan form is seen. In Vienna only the tertian and quartan, but never the irregular, while in the suburbs of that city the irregular type is almost the only one noted. In Tours the tertian types occur, while in Saumur the quartan is found, and both cities are on the same side of the River Loire.

According to Mattei, each form of malarial parasite has its cycle of growth and multiplication. The different malarial organisms are not more like each other than are the various bacteria. These organisms respond somewhat differently to drugs and other tests. Between the different kinds of malarial parasites and the types of fever, an unchanging relation exists as cause and effect, and one form of fever never changes into another. In those forms of malarial fever where a pure type is wanting, it must be admitted that there is a mixed infection, that is, by several kinds of the hemamebæ.

These experiments and conclusions are of the utmost interest, but it cannot be affirmed that the last word has yet been said. Laveran, who was the first to discover the hematozoa, is unwilling to admit that the quotidian is not a distinct type of fever, but merely the result of a tertian or quartan, or that the crescents are never found in the blood of patients with tertian or quartan. Relying on his observations, he believes the organism polymorphous, but single, and its evolution not always the same. The crescents appear in old cases — in those who have had several attacks, or present the malarial cachexia. The type of fever depends on the condition of the subject, his excitability, his tolerance of the miasm, etc. The same view is taken by Fernand Widal in the new *Traité de Médecine.*

The reader who wishes to understand the questions involved in the study of malaria will find them most thoroughly presented and discussed in the work of Drs. W. S. Thayer and John Hewetson in the "Johns Hopkins Hospital Reports," Vol. V, 1895. The report is entitled the "Malarial Fevers of Baltimore: An Analysis of 616 Cases of Malarial Fever, with Special Reference to the Relations existing between Different Types of Hematozoa and Different Types of Fever." In every way the work in this report is most scholarly and well arranged and the literature of the hematozoa of the blood, especially in malarial conditions, containing 359 references, has been so carefully brought together that the report presents to the reader a clear idea of what is settled and understood and what part of the matter is still open to discussion and investigation. The cases, with accompanying temperature charts, help to explain many of the apparently theoretical points previously discussed. The careful and repeated study of the condition of the blood in the large number of cases considered has enabled the authors to present most admirable reproductions of the three organisms in the course of their complete cycle of development. And we are led to believe that the careful microscopical study of the condition of the malarial parasites in the blood will make it perfectly possible to explain the most complicated of fever conditions. It is evident, too, from the clinical work presented that the study of the blood will assist the practitioner in his use of the antimalarial remedy, quinine, and help explain why one case so quickly recovers and why others have so many and persistent relapses. The short section upon the manner of infection is of the greatest practical interest, showing as it does that so far as the evidence has been collected at the present time, the water-supplies are not the sources of the infection, but that the subcutaneous method of entrance is the one that at present seems the most probable.

The medical public owes a deep debt of gratitude to Drs. Thayer and Hewetson for their most painstaking work in thus presenting the results of the investigations of writers of all countries for the past fifteen years, and at the same time recognizes the merit of their own carefully-made observations.

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A SIMPLE EXPEDIENT FOR THE TREATMENT OF NOCTURNAL ENURESIS.

STUMPF, in the *Münchener med. Wochenschrift* for June 11th gives an account of a simple and apparently rational expedient which he has successfully adopted in the treatment of nocturnal enuresis, especially in older children. He was led to try it on the basis of the fact that the passage of even a few drops of urine through the sphincter vesicæ excites the action of the detrusor to such an extent that the call to urinate becomes almost imperative. It is well known how difficult it is to restrain the act of urination after even a small amount of urine has passed the sphincter vesicæ and entered the urethra. His theory is that during sleep the sphincter of the bladder is apt to become relaxed, so that as the child lies horizontally in bed a little urine passes the sphincter and enters the deep urethra. The irritation of this urine causes at once strong reflex action of the detrusor, and the bladder is at once emptied in a full strong stream. It is a well-known fact that in nocturnal enuresis in children the urine does not leak away gradually, but the bladder is emptied at once, a point which is in support of this theory.

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[1] Sajous' Annual, 1894.

In order to prevent the passage of the urine into the urethra when the sphincter becomes relaxed during sleep a simple expedient is adopted, namely, the elevation of the pelvis, so that an accumulation of urine of ordinary amount in the bladder will gravitate back and distend the fundus, and not press against and tend to pass the sphincter. The elevation is secured by allowing the child only a single, small, flat pillow under the head, and placing one or two ordinary pillows under the thighs so that they lie at an angle of 130° to 150° with the horizontal spine.

This simple expedient was entirely successful in curing two inveterate cases, one of a boy nine years, and one of a girl fifteen years old. It was then tried in twelve cases, and was uniformly successful. It was usually necessary to continue the treatment for three weeks, after which time the children were able to return to their former sleeping position without relapsing.

The writer has found it unnecessary to have recourse to the time-honored measures of limiting the amount of liquids, frequent waking up during the night, etc. The chief difficulty about the treatment is to see that the children maintain the position throughout the night. Small children particularly are apt to wriggle and toss about and have to be watched, put back in position, etc. The method is therefore especially adapted to older children, in whom the position can be more easily maintained.

. This method is certainly so simple and apparently so reasonable as to merit extended trial, especially as the time-honored methods of treating this pernicious habit are in so many cases unsuccessful.

It will be rather interesting if the elevation of the pelvis, which Trendelenburg introduced into abdominal surgery, and which has so extended and facilitated work in that field, should also prove of service in preventing children from wetting the bed.

◆

EVOLUTION OF THE PHYSICIAN AND SURGEON.

In the order of development the physician was first differentiated from the priest. This was a natural result of the superstitious notions prevalent regarding sickness. Among many barbarous nations to-day, the medicine man is a priest and a sorcerer. This is clearly brought out by Herbert Spencer in his "Professional Institutions."[1] He states that among existing savages, the Dakotahs, various Southern India and African tribes, the Tahitians, etc., everywhere, as in remote antiquity, the belief prevails that disease is caused by evil spirits, and that treatment must be directed to appeasing or expelling the malignant agencies.

In Assyria and Babylonia there was a gradual separation of the medical from the sacerdotal function, and a disposition among the educated to resort in sickness to natural methods of cure.

Among the Ancient Jews, medicine was long in the hands of the priest, when the Levites were the only physicians. In later days the connection became less and less close, and the distinct office of the physician was recognized (see Ecclesiasticus xxxviii, 15).

Among the early Hindoos, medicine was regarded as of Divine origin, and as having come down through the priesthood. A similar belief prevailed among the Greeks. Physicians were descended from Asklepios. The Asklepiads dwelt principally near the temples of Asklepios, whither the sick and suffering came for relief. In later times, the profession became secularized; this was owing principally to the teaching and influence of Hipprocrates who first gave to medicine the scientific impulse, and emancipated it from priestcraft, sorcery and superstition. It is surprising that Spencer quite overlooks the service rendered by Hippocrates, a service of which modern historians of medicine have ever been duly recognizant.

In early Roman times, there existed no medical class; diseases were held to be supernaturally inflicted, and the methods of treating them were methods of propitiation. Certain maladies ascribed to certain deities prompted endeavor to pacify those deities, and hence, as Mr. Spencer reminds us, there were sacrifices to Febris, Mephitis, Ossipaga and Carna. An island in the Tiber which already had a local healing god became also the seat of the Esculapian cult. Evidently, therefore, medical treatment at Rome as elsewhere was at first associated with priestly functions. Later on, conquered nations, characterized by actual or supposed medical skill furnished the medical practitioners. Physicians and surgeons were mostly slaves or freemen.

From B. C. 530, physicians of Rome, many of whom obtained residence in patrician families and a lucrative practice, were mostly Greeks holding the tradition of Hippocrates.

But emancipation has always come about slowly. Long after the triumph of Christianity in the Roman world, primitive and pagan conceptions of disease and its treatment prevailed. According to Sprengel, after the sixth century, the monks practised medicine almost exclusively. Their cures "were performed by prayers, relics of martyrs, holy water, etc., often at the tombs of martyrs. In the 12th century the practice of medicine by priests was found to interfere so much with their religious functions that orders were issued to prevent it, as by the Lateran Council in 1123, the Council of Reims in 1131, and again by the Lateran Council in 1139. But the usage survived for centuries later in France, and probably elsewhere, as it seems that only when a papal bull permitted physicians to marry, did the clerical practice of medicine begin to decline. Warton says: "The physicians of the University of Paris were not allowed to marry till the year 1452."

In England, as late as 1456 the practice of medicine was still to some extent in the hands of the clergy, and during the reign of Henry VIII, physicians and surgeons had to obtain a license to practise from the bishop of the diocese. It is alleged that down to the early part of our own century, there remained with the Archbishop of Canterbury a latent power of granting medical diplomas. So that "the separation between 'soul-curer and body-curer' which goes on as savage people develop into civilized nations, has but very gradually completed itself throughout Europe."

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[1] Popular Science Monthly, January, 1895.

As for the distinction between doctor and surgeon, this, says Mr. Spencer, is not one which has arisen by differentiation, but is one which asserted itself at the outset. "For while both had to cure bodily evils, the one was concerned with evils supposed to be supernaturally inflicted, and the other with evils that were naturally inflicted, — the one with diseases ascribed to possessing demons, the other with injuries inflicted by human beings, by beasts, and inanimate objects, hence we naturally find in the records of early civilization more or less decided distinctions between the two."

Though the divisions in medicine and surgery have become manifold, these minor differentiations have yet, we are told, hardly equalled the specializations existing in Ancient Egypt, where, according to Herodotus, "each physician treats a single disorder, and no more."

In conformity with the normal order of evolution, "integration" has accompanied the differentiation. From the beginning have been shown tendencies toward unions of those who practised the healing art. There have arisen institutions giving a certain common education to them, and in later times, certain general though less close associations of medical men.

Mr. Spencer alludes appropriately to the powerful influence of the medical journal in promoting integration by bringing into communication educational institutions, incorporated bodies, and the whole profession.

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MEDICAL NOTES.

Professor Trendelenburg.— This distinguished surgeon has been offered the professorship of surgery at Leipsic, and his chair at Bern thus rendered vacant will be filled by Professor Miculicz, of Breslau.

A Medical School for Women in St. Petersburg.— The medical school for women which has long been talked of in St. Petersburg is at length to be established. The Council of the City has unanimously voted in favor of its establishment, and the necessary funds have been secured by private subscription.

Archiv für Verdauungskrankheiten. — The first number of this journal, which is published in Berlin under the editorship of J. Boas, has just appeared. The new periodical contains original articles, comprehensive reports on the subjects to which it is devoted, reviews of literature and book-reviews.

The Physician as an Athlete.— A project is on foot in England for a testimonial to Dr. W. G. Grace, that member of the medical profession who has held the championship of the English national game for no less a period than twenty years, an unexampled record. The medical profession may well be proud of such an example of the preservation of bodily vigor and endurance in their ranks, and have the right to claim that his insight into the rules of health has in large measure enabled him to maintain his remarkable record. The English tennis champion, Pim, who has recently won laurels on American courts, is also an example of the successful combination of medicine and athletics.

The American Surgical Association. — At the recent meeting of the American Surgical Association in New York City, the following officers were elected for the ensuing year: President, Dr. L. McLane Tiffany, Baltimore. Vice-Presidents, Dr. C. Fenger, Chicago, and Dr. W. H. Carmalt, New Haven. Secretary, Dr. M. H. Richardson, Boston. Treasurer, Dr. N. P. Dandridge, Cincinnati. Recorder, Dr. DeForest Willard, Philadelphia. Chairman Local Committee of Arrangements, Dr. T. A. McGraw, Detroit. The meeting for 1896 will be held in Detroit.

Acute Aseptic General Peritonitis.— Hartmann and V. Morax reported in the *Annales de Gynécologie*, March, 1894, two cases of this sort, in one of which the spleen was found with a doubly twisted pedicle, changed into a reddish-brown mass, and was removed. No toilet of the peritoneum was made. In the second case an ovarian cyst was found with a twisted pedicle. In both cases the peritoneal fluid was mixed with fibrin and purulent material, which was found to be sterile on careful bacteriological and microscopic examination. Recovery was prompt and uneventful in both cases. The peritoneal toilet is unnecessary in cases of this sort.

Bacteria of Graveyard Soil. — Dr. E. H. Wilson, Bacteriologist of the Brooklyn City Board of Health, has submitted a report of his investigations on fragments of coffins sent him from some of the Brooklyn suburban cemeteries. He says, in substance, that while these fragments contain, as might be expected, a large variety of bacteria, no pathogenic varieties have been found; that the popular idea that all bacteria are dangerous is a totally erroneous one. The bacteria which are engaged in the process of destructive decomposition of the body are doing a beneficent work in returning to the soil the elements of which the body is composed, in a condition to be readily assimilated by the higher plants. Investigation has shown that the soil of graveyards contain no more bacteria in proportion than the soil of other places, especially below a certain depth. "In conclusion, I would say that while the presence of coffin fragments several years old is not to be commended from a bacteriologic point of view they are comparatively harmless, and only remind us more forcibly of the fact that it is the living and not the dead from whom we may expect harm in this matter."

NEW ENGLAND.

Annual Dinner of the Harvard Medical Alumni Association. — The annual dinner of the Harvard Medical Alumni Association was held at the Hotel Vendome, Boston, on Tuesday, June 25th. Dr. Geo. B. Shattuck, the President of the Association, presided. The speakers were President Charles W. Elliot of Harvard University, Dr. Roswell Park, of Buffalo, Dr. George Dock, of Ann Arbor, Dr. Geo. J. Englemann, St. Louis and Dr. John Green, of St. Louis. The foregoing gentlemen, with Dr. Wm. L. Richardson, Dean of the Harvard Medical School, were the guests of the Association. About 170 members of the Association were present at the dinner.

NEW YORK.

Increase in the Force of Sanitary Inspectors. — The Board of Health has appointed the usual corps of fifty physicians to serve as extra sanitary inspectors during the months of July and August.

Mortality of New York City. — The number of deaths reported in the city during the week ending June 29th was 798, against 710 during the preceding week; the increase in mortality being principally due to the increase of diarrheal diseases, which caused 121 deaths. The number of deaths from phthisis was 81; from pneumonia, 63; from diphtheria, 27; and from measles, 25.

Dr. George B. Fowler appointed Health Commissioner. — Mayor Strong has appointed Dr. George B. Fowler as successor to Dr. Cyrus Edson on the Board of Health. The appointment is regarded as an excellent one as Dr. Fowler is very popular and has attained an eminent position in the profession. He is a graduate of the College of Physicians and Surgeons, New York, in the class of 1871, and has been for some time one of the attending physicians to Bellevue Hospital and to the New York Infant Asylum. He has been prominently identified with life insurance, and is at present Professor of Clinical Medicine, Renal and Digestive Disorders, in the New York Post-Graduate Medical School.

Resignation of Dr. Cyrus Edson. — It is announced that Dr. Cyrus Edson has resigned his position as Health Commissioner at the request of Mayor Strong. He was appointed commissioner by Mayor Gilroy in April, 1893, to succeed Dr. Joseph D. Bryant. At that time he was sanitary superintendent, and he had been in the service of the Board of Health in various capacities, for a number of years. He is regarded as an authority on contagious diseases and has done excellent work in stamping out outbreaks of typhus fever and other infectious forms of disease. Dr. Edson states that he will also resign his positions as president of the Board of Pharmacy and member of the State Board of Health, as he has accepted an appointment as medical director of a large corporation and entered into an engagement to edit the *American Physician*, published in Philadelphia.

◆

Miscellany.

A DEGREE IN STATE MEDICINE.

The Rush Medical College of Chicago in its annual announcement offers a post-graduate degree in State medicine, the title of the degree being Doctor Medecinæ Civitatis. The requirements for the degree are the following:

(1) The candidate must be a Doctor in Medicine, of not less than one year's standing.

(2) The name of the candidate must have been on the matriculation book at least eight months before the examinations.

(3) The candidate must have completed, subsequent to registration, six months' practical instruction in a laboratory approved by the faculty, and also have studied, practically, outdoor sanitary work for four months, under an approved officer of health.

The examination (which will be rigid) includes the subjects of State medicine and hygiene, chemistry, physics and meteorology, engineering, morbid anatomy, vital statistics, medical jurisprudence and law. The recognition of State medicine as a special department of medicine is certainly a step in advance, and one which deserves to be followed by other colleges.

It is rather surprising, however, that from so full a list of subjects for examination, a department of such importance to State medicine as bacteriology should not be given a separate examination of at least two hours in length, and not limited, as is proposed in the announcement to a small fractional portion of a two-hour examination which shall cover the entire field of State medicine and hygiene.

◆

A BULLET DISCHARGED FROM THE BODY AFTER TWENTY-FIVE YEARS.

The following is a copy of a letter on file in the records of the Massachusetts Branch of the United States Pension Office at the State House:

Fall River, Mass., March 12, 1888.

Friend I.:— I thought you would be pleased to hear of a recent *report* here.

J. B., on the State Aid, was the first man in on pay day. He is a worthy old fellow, and came in all excited. "Mr. B.," he says, "What do you think happened to me last night?" "I'm sure I don't know," I replied. "Well," he went on, as sober as a judge, "I got up last night to make water, and while doing that I broke wind. Hearing a rattle on the floor, I looked around and found a bullet there, which was discharged by the wind. At the battle of Antietam, twenty-five years ago, I received a flesh wound in the stomach, but did not know that the ball lodged, until last night. The doctor says it ulcerated into the intestines, and finally was shot out, as I tell you."

This is quite an experience, as I think you will admit.

Very truly yours, C. B.

BRILLIANT RESULTS OF PHYSIOLOGICAL TEACHING.

The following answers were made to the questions on a paper in physiology by a candidate for a degree in medicine at a medical school not in St. Louis.

(1) What constituents of meat does a clear soup contain, and what is its nutritive value?

Clear soup contains the juice of the meat only, and its nutritive value is high in peptones, parapeptones and proteids.

(2) Explain the action of relishes and condiments.

Relishes are the principal constituents of the body and act as a nourishment, while condiments act as a stimulant, giving to the body a stupor.

(3) What is the function of the stomach?

The function of the stomach is to digest the food after it has passed from the mouth into the large intestine.

(4) What is the difference between blood-serum and blood-plasma?

After the blood has been drawn and stood until it has coagulated, a thick mass is formed on the top called blood-plasma. The fluid [*sic*] in the blood is called blood-serum.

(5) Explain the character and cause of the heart-sounds.

The character of the heart-sounds is a long sound preceded by a short, quick sound, resembling the sound of the words "lub dub." The cause of these sounds is flowing of the blood from aortic into tricuspid valves.

(6) What is meant by the "internal secretion" of glands? Give examples.

The internal secretion of glands is the absorption of the glands in the body. The salivary glands are absorbed in the act of swallowing the saliva [*sic*] in the mouth.

(7) What is glycogen? Where is it found and how does it appear to be useful?

(8) Explain the importance of afferent nerve impulses for the production of voluntary motions.

(9) Explain the phenomenon of irradiation.

(10) Give examples of anabolic processes taking place in the animal body.

(11) What is urea? Where formed? Where excreted? What is its relation to muscular work?

Urea is the principal constituent of the urine and is formed in the kidneys. It is excreted from the bladder through the urethra and thence to the penis.

(11) What is residual air? How is its amount measured?

◆

HENRY W. WILLIAMS, M.D.

At a recent meeting of the Visiting Staff of the Boston City Hospital the following resolutions were adopted:

Resolved, that by the death of Dr. Henry W. Williams the Staff of the Boston City Hospital loses one of its founders, its President for many years, and one of its most brilliant members.

Patient assiduity in every duty, however laborious, thorough self-reliance, confident boldness, double dexterity as an operator, were Dr. Williams's characteristics.

He was the most punctual and painstaking of presiding officers — persistent yet prudent, genial and tactful.

His energy and foresight did much to place this hospital in its present enviable position; and we shall long miss and regret his counsel and his friendship.

We desire thus to express to the Trustees and to his family our deep sense of the loss we have all sustained.

Resolved, that a copy of the foregoing be sent to the Trustees, to his family, and to the *Boston Medical and Surgical Journal* for publication.

Edward J. Forster, M.D., *Sec'y of the Visiting Staff.*

METEOROLOGICAL RECORD,

For the week ending June 22d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..16	30.45	64	66	62	77	69	73	N.E.	S.	11	12	F.	C.	
M..17	30.33	70	82	59	59	66	62	S.W.	S.W.	11	16	C.	F.	
T ..18	30.14	70	81	58	58	48	53	N.W.	S.W.	4	11	C.	F.	
W..19	30.02	66	72	61	68	86	77	S.E.	S.E.	6	5	F.	C.	
T ..20	30.02	64	70	59	90	90	90	N.E.	E.	3	4	C.	C.	
F..21	30.05	68	72	64	81	81	81	S.E.	S.	3	6	C.	O.	
S...22	30.01	70	76	63	87	77	82	S.	S.	7	9	O.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, June 22, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Measles.
New York . .	1,956,000	710	336	22.54	11.62	6.16	5.60	1.74
Chicago . . .	1,600,000	—	-	—	—	—	—	—
Philadelphia .	1,139,457	359	121	23.24	12.60	12.32	6.16	.84
Brooklyn . .	1,013,000	337	132	11.31	12.48	2.03	4.64	.87
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	174	39	11.97	19.95	.57	7.41	1.14
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	70	20	8.52	25.56	2.84	—	—
Cincinnati . .	325,000	112	43	11.57	17.04	.89	1.78	4.45
Cleveland . .	325,000	74	19	10.80	10.80	2.70	4.05	—
Pittsburg . .	272,000	90	46	27.75	4.44	22.20	1.11	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	36	18	—	—	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	18	6	22.22	—	—	16.66	—
Fall River . .	92,233	34	13	20.58	8.82	14.70	—	—
Lowell . . .	90,613	—	—	—	—	—	—	—
Cambridge . .	79,607	18	2	16.66	5.55	11.11	5.55	—
Lynn	65,123	13	2	15.38	7.69	—	—	—
Springfield . .	50,284	4	4	—	—	—	—	—
Lawrence . .	49,900	19	7	10.52	10.52	10.52	—	—
New Bedford .	47,741	16	4	—	—	—	—	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	11	3	—	27.27	—	—	—
Salem	33,155	7	2	14.28	—	14.28	—	—
Haverhill . .	32,925	10	6	20.00	10.00	—	—	—
Malden . . .	30,209	8	2	25.00	25.00	—	12.50	—
Chelsea . . .	29,806	10	6	20.00	10.00	—	20.00	—
Fitchburg . .	29,383	8	0	—	12.50	—	—	—
Newton . . .	28,837	8	0	—	12.50	—	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,954	5	1	—	—	—	—	—
Waltham . .	22,058	3	2	—	33.33	—	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	4	1	—	75.00	—	—	—
Everett . . .	16,585	4	2	—	—	—	—	—
Northampton .	16,331	2	0	—	50.00	—	—	—
Newburyport .	14,073	3	2	—	—	—	—	—
Amesbury . .	10,920	1	0	—	—	—	—	—

Deaths reported 2,244; under five years of age 864; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 409, consumption 282, acute lung diseases 215, diarrheal diseases 145, diphtheria and croup 108, measles 58, typhoid fever 32, scarlet fever 22, cerebro-spinal meningitis 19, whooping-cough 11, malarial fever 10, erysipelas 4.

From typhoid fever Philadelphia 9, New York 8, Washington 4, Brooklyn, Cincinnati, Cleveland, and Pittsburg 2 each, Somerville and Malden 1 each. From scarlet fever New York 12, Boston 3, Pittsburg and Fall River 2 each, Philadelphia, Providence and Nashville 1 each. From cerebro-spinal meningitis New York 10, Cincinnati and Lynn 2 each, Philadelphia, Cleveland, Worcester, Haverhill and Woburn 1 each. From whooping-cough New York 4, Brooklyn 2, Philadelphia, Boston, Cincinnati, Providence and Haverhill 1 each. From malarial fever Brooklyn 7, New York 2, Nashville 1. From erysipelas Philadelphia and Brooklyn 2 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending June 8th, the death-rate was 15.5. Deaths reported 3,139; acute lung diseases (London) 163, measles 72, diarrhea 59, diphtheria 51, whooping-cough 51, scarlet fever 33, fever 26, small-pox (Bolton and Oldham 1 each) 2.

The death-rates ranged from 10.4 in Portsmouth to 25.7 in Burnley; Birmingham 14.6, Bradford 11.7, Bristol 13.7, Huddersfield 14.2, Hull 16.4, Leeds 13.6, Leicester 13.2, Liverpool 20.9, London 14.8, Manchester 19.8, Newcastle-on-Tyne 15.9, Preston 18.1, Sheffield 14.8, West Ham 12.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 22, 1895, TO JUNE 28, 1895.

Captain Alfred E. Bradley, assistant surgeon, will be relieved from duty at Fort Custer, Montana, upon the arrival there of **Major William C. Shannon**, surgeon, and will report for duty at Fort Yellowstone, Wyoming, for duty at that post, relieving **Captain Charles M. Gandy**, assistant surgeon.

Captain Gandy, on being thus relieved, will report for duty at Washington Barracks, D. C.

AMERICAN ORTHOPEDIC ASSOCIATION.

The ninth annual meeting will be held in the Columbus Memorial Building, 103 State Street, Chicago, September 17, 18 and 19, 1895. The meetings will be called to order at 9 A. M.

After adjournment on Wednesday the members will be the guests of the Chicago Orthopedic Society for luncheon and an excursion to the Drainage Canal. In the evening the annual dinner will be served at the Chicago Club.

On Thursday, at high noon, the Association will go into executive session, when the officers for the ensuing year will be elected. At the adjournment of the executive session the members will be the guests of Dr. F. S. Coolidge at luncheon. It is hoped that there may be time for a clinic at the Presbyterian Hospital by Dr. Nicholas Senn, or at the Cook County Hospital by Dr. J. B. Murphy. The details of this last afternoon cannot be definitely arranged now; all that can be said is that the Chicago Orthopedic Society will claim the members as their guests during the remainder of their stay in Chicago.

The following papers have already been promised: Dr. Barnard Bartow, Buffalo, On Forcible Correction and Corrective Jackets, in the Treatment of Scoliosis. Dr. Wallace Blanchard, Chicago, Idiopathic Osteo-arthritis. Dr. E. G. Brackett, Boston, (1) The Use of the Plaster Jacket in Caries and the Effect of Position on the Spine; (2) Caries in Adults. Dr. E. H. Bradford, Boston, (1) Operative Measures in Caries of the Spine; (2) Treatment of Slipping Patella. Mr. Bernard Brodhurst, London, Eng., On the Surgical Treatment of Congenital Dislocations. Dr. F. S. Coolidge, Chicago, Some Cases of Osteoclasis with the Lorenz Osteoclast. Dr. Nicholas Gratton, Cork, Ireland, Improved Osteoclast. Dr. V. P. Gibney, New York, Title not announced. Dr. A. E. Hoadley, Chicago, New (anterior) Spine Brace, with exhibition of patients. Dr. A. B. Hosmer, Chicago, Title not announced. Dr. A. B. Judson, New York, The Deformity of Hip Disease. Dr. Samuel Ketch, New York, The Causative Relation of Suppuration to Tubercular Meningitis in Joint and Spine Disease. Dr. R. W. Lovett, Boston, Ambulatory Treatment of Pott's Disease. Dr. R. W. Lovett and Dr. John Dane, Boston, Club-Foot. Dr. S. L. McCurdy, Pittsburg, (1) Congenital Absence of Radii, with operation; (2) Exhibition of Hip-Joint Brace; (3) Plaster-of-Paris in Orthopedic Surgery; (4) Specimens of Tubercular Bone Disease. Dr. B. E. McKenzie, Toronto, (1) The Rawhide Corset Spinal Brace; (2) A Review of the Treatment of Hip Disease. Dr. T. H. Myers, New York, Spasmodic Wry-neck. Dr. G. B. Packard, Denver, Title not announced. Dr. Roswell Park, Buffalo, The Deformities Produced by Acute Inflammatory Lesions in Bone. Dr. A. M. Phelps, New York, (1) The Report of a Case of Congenital Dislocation of the Shoulder, and an Operation for its Relief; (2) The Treatment of Fracture from an Orthopedic Standpoint; (3) How the Orthopedic Surgeon should Treat Abscesses (tubercular and purulent). Dr. John Ridlon, Chicago, The President's Address. Dr. Bernard Roth, London, Eng., One Thousand Cases of Lateral Curvature of the Spine Treated by Posture and Exercise. Dr. J. C. Schapps, Brooklyn, The Anterior Spine Brace. Dr. H. M. Sherman, San Francisco, Some Considerations of the Mechanical Arrangements around the Hip Joint. Mr. Noble Smith, London, Eng., Several papers, titles not announced. Dr. H. L. Taylor, New York, A Case of Double Congenital Knee Luxation. Dr. L. A. Weigel, Rochester, (1) Pain in the Back; (2) Metatarsalgia; (3) The Use of Mechanical Support in the Treatment of Scoliosis. Dr. Royal Whitman, New York, Observations on Weak-foot, with particular reference to its predisposing cause, its diagnosis and its cure. Dr. H. Aug. Wilson, Philadelphia, A Report of Seventy Cases of Splicing of the Tendo-Achilles. Dr. J. K. Young, Philadelphia, The Treatment of Scoliosis by Light Gymnastic Exercises.

Papers have also been promised, if there is time for their reading, by Drs. L. L. McArthur, Weller Van Hook, Robert Tilly, Joseph Zeisler, H. P. Woley and other gentlemen of Chicago; but these papers will not be presented except by vote of the Association.

John Ridlon, M.D., *President*.
Royal Whitman, M.D., *Secretary*.

LITCHFIELD COUNTY MEDICAL SOCIETY.

A meeting of this Society will be held July 9, 1895, at the residence of Dr. Fred S. Dennis, Norfolk, Conn.

The following papers will be presented: Dr. R. S. Goodwin, of Thomaston, The Physician as a Sanitarian. Dr. William H. Welch, of Baltimore, Md., (*a*) The Antitoxin Treatment of Diphtheria; (*b*) Some Interesting Pathological Observations Concerning Gonorrheal Infection. Dr. L. Duncan Bulkley, of New York, Notes on some of the Newer Remedies used in Diseases of the Skin. Dr. Frederick S. Dennis, of New York, Subject to be announced. Dr. William H. Porter, of New York, Remarks upon Nuclein and Proto-Nucleins. Dr. George H. Knight, of Lakeville, The Feeble-Minded. Dr. J. C. Kendall, of Norfolk, The Prophylaxis of Tuberculosis.

RESIGNATION AND APPOINTMENTS.

Dr. Edward J. Forster has resigned as a member of the Board of Registration in Medicine and **Dr. Edwin B. Harvey**, of Westboro, has been nominated and confirmed to fill the vacancy. At a meeting of the Board held on June 20th, Dr. Harvey was elected its secretary.

The Governor has re-appointed **Augustus C. Walker**, M.D., of Greenfield, a member of the Board of Registration in Medicine.

HONORARY DEGREE.

At the commencement exercises at Dartmouth College the degree of A.M. was conferred upon **Dr. Geo. W. Gay**, of Boston.

CORRECTION.

In the obituary notice of the late Dr. H. W. Williams it was stated that he was the *founder* of the American Ophthalmological Society. This is an error, which he would have set right were he living. He was one of the early members. D. W. C.

RECENT DEATHS.

Prof. Thomas H. Huxley died at Eastbourne on June 29th, aged seventy years. He began his distinguished scientific career as a student of medicine at the Charing Cross Hospital in 1842, and in 1845 received his degree of M.B. from the University of London.

In 1846 he joined the naval medical service, and the same year visited the South Pacific as assistant surgeon to Captain Stanley's expedition. On this voyage Professor Huxley was absent four years, and circumnavigated the globe, making special observations at Australia and Papua. He sent home many papers as the fruits of this voyage, and at his return these were elaborated and revised and printed in the "Philosophical Transactions" of the Royal Society, of which Professor Huxley was elected a member in 1851.

In 1853 he resigned his naval position, and in 1854 succeeded Professor Forbes as professor of natural history in the Royal School of Mines, which he held for many years. From 1863 to 1869 he was Hunterian professor in the Royal College of Surgeons and was twice elected Fullerian professor of physiology.

In 1869 and 1870 he was president both of the Geographical and Ethnological Societies; in 1870 he was president of the British Association for the Advancement of Science and in 1872 he was made secretary of the Royal Society. In 1870 he was elected on the royal committee on scientific instruction and the advancement of science.

Professor Huxley's work in biology and the part he has played in the development of our present views in evolution, are too well known to need our comment. The many, varied, and important contributions he has made to the advancement of natural science are his best monument.

Professor Verneuil, the distinguished French surgeon, died in Paris on June 12th, of pneumonia, at the age of seventy-two years.

Now complete in Twelve Parts, at 50 cents each. Part I will be sent on receipt of 50 cents; or the complete work of twelve Parts for $5.00, sent by mail.

A NEW AND PRACTICAL SYSTEM OF STUDYING THE GERMAN LANGUAGE,

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FOR SELF-INSTRUCTION,
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Has received the highest commendations from the most prominent Medical Authorities and the Medical Press in this country.

Dr. NICHOLAS SENN, *Professor of Surgery, Rush Medical College, Chicago:* "I am pleased with specimen copy of your forthcoming book 'A Practical System of Studying the German Language, for Physicians and Medical Students.' The work promises to be of great usefulness for the purpose for which it is intended."

Explanatory circulars and testimonials sent free on application to

Agents Wanted. **E. S. TANNER, Publisher, Newtonville, Mass.**

Members of the Medical Profession

Are respectfully invited to call, when convenient, at Chauncy-Hall School-house, to examine its special arrangements for the health of boys and girls, including:

VENTILATION WITHOUT DRAUGHTS,
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593 Boylston Street, near Dartmouth.

"The Value of ANTIPYRINE to the Surgeon."

Under this title Prof. ROSWELL PARK, of Buffalo, has called the attention of the profession in a recent number of the *Medical News*, to the valuable antiseptic, analgesic and styptic properties of ANTIPYRINE when employed locally. He uses it in five-per-cent. solution as a spray in the nasal cavity for epistaxis, upon the peritoneum, upon the surface of the brain or wherever else there is oozing. Of course it has not the power to contract vessels of any size that spurt, but will almost instantly check oozing. He has found it also to be unirritating, antiseptic and analgesic.

Reprint of PROF. PARK'S article together with other interesting brochures, will be sent upon request.

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SCHULZE-BERGE & KOECHL, **79 Murray St.**
Sole Licensees for the United States. **NEW YORK.**

Dr. Oliver Wendell Holmes.

The issue of this Journal for the 11th of October, 1894, contains an admirable original portrait of the late Dr. Oliver Wendell Holmes, together with an editorial notice, also a hitherto unpublished poem, and a bibliography of his writings on medical and scientific subjects.

Will be mailed on receipt of **25** cents in stamps, or the portrait alone for **15** cents.

DAMRELL & UPHAM, *Publishers,*
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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum.............................. 2
Albany Medical College.............................. 18
Anheuser-Busch Brewing Association........ 3
Antikamnia Chemical Company...Antikamnia 30
Armour & Co............The Armour Laboratory 14
Baker, L. W., M.D.... ....Riverview 19
Baker, Dr. W. H.............................Card 19
Bartlett, Dr. B. W...........................Card 19
Battle & Co. ....Bromidia 29
Bellevue Hosp. Med. Col..... Sessions of '94-95 16
Bowdoin College............Medical Department 16
Boylston Medical Prize Questions............ 2
Breitenbach Co., M. J...........Pepto-Mangan 4
Channing, Dr. Walter.............................. 19
Chauncy Hall School.............................. 31
Cocke, Dr. James R.............................. 19
Codman & Shurtleff......Surgical Instruments 21
Coll. of Physicians and Surgeons, Boston... 16
Coll. Physicians and Surgeons, Baltimore, 16
Columbian University.............................. 16
Crittenton, C. N.... ....Vinolia Soap 12
Cutter, Dr. W. P.............................. 19
Dadirrian, Dr..............................Matzoon 20
Dartmouth College, N. H....Med. Department 16
Doliber-Goodale Co...............Mellin's Food 1
Drevet Co..............................Hydrozone 15
Edes, Dr. Robert T.............................Card 19
Evans & Sons.............. ...Sandal Capsules 21
Fairchild Bros. & Foster.........Milk Mixture 7
Feeble-Minded Youth, Inst. for..Barre, Mass. 19
Fehr, Dr. J....................Baby Powder, etc. 20
Fellows, James I. ....Hypophos-phites 23
Fisk & Arnold.......................Artificial Limbs 12
Flood, Dr. Everett.............................. 19
Fougera, E. & Co............Imp'g Pharmacists 9, 27
Gear, J. Frank ....Surgical Instruments 3
Goldthwaite, Dr. S. V........ 19
Goode, T. F................Buffalo Lithia Water 13
Gould's Medical Dictionary............ 28
Graham, Dr. Douglas......Treatise on Massage 28
Greene, Dr. E. M........Examinations of Sputa 19
Harvard University........Dental Department 16
Harvard University.......Medical Department 32
Heath & Beaty............Anti-Tubercle Serum 26
Improved Movement Cure Institute......... 18
Jefferson Medical College..................... 17
Kingsbury, Dr. A. D...........................Card 19
Leedom, Charles.................Nuclein Solution 3
Lehn & Fink.........................Mfg. Chemists 10
Lloyd, Andrew J. & Co. .....Manufg. Opticians 2
Long Island College Hospital.................. 16
Mackie, Dr. L. V. G. .... Sanitarium 19
Maltine Mfg. Co.............................. Maltine 4
Mariani & Co..........................Vin Mariani 11
Marks, A. A.......................Artificial Limbs 6
Martin, Dr. F. C...................Vaccine Virus 5
McElroy, P. J......................Glass Syringes 12
Massachusetts Board of Health............. 11
Medico-Chirurgical College 16
Norton, Dr. Eben C..... .. ....Mental Diseases 19
N. Y. Polyclinic and Hospital.................. 16
N. Y. Post-Graduate School and Hospital.. 17
Oakland Chemical Co.......Hydrogen Dioxide 6
Pasteurine Chemical Co......................... 26
Patch, E. L. Co.............. .....Lithia Tablets 5
Peake & Buzzell ....Surgeons' Supplies 24
Pinaud, Ed.............................Sels Romains 22
Practice For Sale.............................. 2
Reed & Carnrick.....................Peptenzyme 24
Removal.............................. 2
Ring, Dr. Allan Mott.........Nervous Diseases 19
Russell, Dr. F. W .... Card 19
Schieffelin & Co....................Mfg. Chemists 14
Schulze-Berge & Koechl......Migranin, etc. 12, 31
Seeley, I. B. & Co.......... .Hard Rubber Trusses 5
Sharp & Dohme......................Mfg. Chemists 29
Stearns & Co., Frederick..............Kolavin 25
Stedman, Dr. Henry R.......................Card 19
Tanner, E. S.............................Publisher 31
Thayer, Henry & Co..................... 22
Theodore Metcalf Co.......................Coca 8
Twitchell, Dr. George B............... Card 19
Tyrer, J. S. ....Antiseptic Powder 25
University of the City of New York....... 18
University of Vermont........................ 17
Walnut Lodge Hospital... 19
Waterman, Dr. Thomas..Animal Vaccine Virus 2
Weeks & Potter Co. ....Quinona 30
Wheeler Chem. Works.....Saw Palmetto Comp. 24
Wheeler, Dr. T. B.. ....Phosphates 25
White, Dr. Walter H........................Card 19
Willard, Dr. A. J..............................Card 19
Woman's Hospital, Lowell...................... 19
Woman's Medical College, Baltimore....... 16
Woman's Med. Coll..of the New York Infirmary 16
Woodward, L. F. ....Stammering 2
Wool Oil Refining Co .... Wool Oil 25
Yale University..........Medical Department 16

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No.	Subject.	Instructor.	Place.	No. of Exercises	Begins.	Ends.	Days.	Hour.	Fee.
1	Anatomy of the Brain	Dr. Dexter	Medical School	12	July 1	July 26	Mo. We. Fr.	10	$20.00
2	Anatomy of the Ear[1]	Dr. Bryant	Medical School	13	Aug. 2	Aug. 30	Mo. We. Fr.	2	20.00
3	Histology and Microscopy[2]	Dr. Ames	Medical School	18	July 15	Aug. 16	Mo. We. Fr.	3	20.00
4	Clinical Microscopy[1]	Dr. Whitney	Mass. General Hospital	17	June 1	June 29	Tu. We. Fr. Sat.	11.30	15.00
5	Clinical Microscopy	Dr. Whitney	Mass. General Hospital	18	July 1	July 31	Tu. We. Fr. Sat.	11.30	15.00
6	Clinical Microscopy	Dr. Whitney	Mass. General Hospital	16	Sept. 3	Sept. 28	Tu. We. Fr. Sat.	11.30	15.00
7	Chemistry[3,4]	Dr. Hills	Medical School	30	June 24	July 27	Daily	10	30.00
8	Medical Chemistry[4,5]	Dr. Ogden	Medical School	30	July 1	Aug. 3	Daily	1	30.00
9	Pathological Anatomy[6]	Dr. Taylor	Medical School	14	July 1	July 31	Mo. We. Fr.	3	20.00
10	Pathology of Infectious Diseases[1]	Dr. Wright	Medical School	27	June 20	July 20	Daily	2	25.00
11	Clinical Medicine	Dr. Gannett	Mass. General Hospital	21	July 1	Aug. 16	Mo. We. Fr.	9	20.00
12	Clinical Medicine	Dr. Gannett	Mass. General Hospital	19	Aug. 19	Sept. 30	Mo. We. Fr.	9	20.00
13	Clinical Medicine	Dr. Withington	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10.30	15.00
14	Clinical Medicine[1,7]	Dr. Vickery	Mass. General Hospital	12	June 3	June 28	Mo. We. Fr.	10	15.00
15	Clinical Medicine	Dr. Bowditch	City Hospital	16	June 4	July 26	Tu. Fr.	10	20.00
16	Orthopedic Surgery	Dr. Bradford	Children's Hospital	18	July 1	Aug. 28	Mo. We.	4	20.00
17	Clinical and Operative Surgery	Dr. Mixter	Mass. General Hospital	25	June 4	July 30	Tu. Th. Sat.	11	25.00
18	Clinical and Operative Surgery	Dr. Mixter	Mass. General Hospital	25	Aug. 1	Sept. 26	Tu. Th. Sat.	11	25.00
19	Clinical and Operative Surgery[1]	Dr. Monks	City Hospital	13	Aug. 2	Aug. 30	Mo. We. Fr.	10	20.00
20	Clinical and Operative Surgery[1]	Dr. Monks	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10	20.00
21	Genito-Urinary Surgery	Dr. Watson	City Hospital	13	June 1	June 29	Tu. Th. Sat.	11	20.00
22	Clinical and Operative Surgery[1]	Dr. Conant	Carney Hospital	20	July 3	Aug. 16	Mo. We. Fr.	10	25.00
23	Clinical and Operative Surgery[1]	Dr. Conant	Carney Hospital	19	Aug. 19	Sept. 30	Mo. We. Fr.	10	25.00
24	Clinical and Abdominal Surgery[1]	Dr. Conant	Charity Hospital	13	June 6	July 30	Tu. Th.	10	25.00
25	Clinical and Abdominal Surgery[1]	Dr. Conant	Charity Hospital	17	Aug. [illegible]	Sept. 26	Tu. Th.	10	25.00
26	Intubation of the Larynx[1,8,14]	Dr. Scudder	Medical School	3	July	Aug.			10.00
27	Surg. Apparatus and Bandaging[1,9,14]	Dr. Scudder	Medical School	10	July 8	July 18	Daily		15.00
28	Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	13	July 2	July 30	Tu. Th. Sat.	10	20.00
29	Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	13	Aug. 2	Aug. 30	Mo We. Fr.	10	20.00
30	Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	20.00
31	Minor Surgery	Dr. Brooks	Mass. General Hospital	14	July 1	July 31	Mo. We. Fr.	10	15.00
32	Minor Surgery	Dr. Brooks	Mass. General Hospital	14	Aug. 1	Aug. 31	Mo. Th. Sat.	10	15.00
33	Minor Surgery	Dr. Brooks	Mass. General Hospital	13	Sept. 2	Sept. 30	Mon. We. Fr.	10	15.00
34	Clinical Obstetrics	Dr. Green	Lying-in Hospital	45	June 1	July 31			30.00
35	Clinical Obstetrics	Dr. Green	Lying-in Hospital	45	Aug. 1	Sept. 30			30.00
36	Clinical Obstetrics[1]	Dr. Townsend	Lying-in Hospital	8	Sept. 2	Sept. 27	Mo. Fr.	12	15.00
37	Clinical Obstetrics[1]	Dr. Haven	Lying-in Hospital	9	July 1	July 29	Mo. Fr.	11	15.00
38	Operative Obstetrics	Dr. Haven	Medical School	11	July 8	July 19	Daily	4	20.00
39	Diseases of Children[10]	Dr. Buckingham	Children's Hospital	18	June 1	July 30	Mo. Th. Sat.	10	20.00
40	Diseases of Children[11]	Dr. Wentworth	Children's Hospital	18	Aug. 1	Sept. 28	Daily	10	20.00
41	Diseases of the Ear	Dr. Blake	Eye and Ear Infirmary	12	Sept. 3	Sept. 28	Tu. Th. Sat.	9	12.00
42	Diseases of the Eye[1]	Dr. Standish	Eye and Ear Infirmary	13	July 2	July 30	Tu. Th. Sat.	10	20.00
43	Diseases of the Eye	Dr. Cheney	Eye and Ear Infirmary	22	June 12	July 31	Mo. We. Fr.	9	20.00
44	Diseases of the Larynx	Dr. Farlow	City Hospital	13	June 3	July 12	Mo. We. Fr.	10	20.00
45	Diseases of the Nervous System	Dr. Walton	Mass. General Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	20.00
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47	Diseases of the Skin	Dr. Bowen	Mass. General Hospital	20	Aug. 15	Sept. 27	Tu. Th. Fr.	10	20.00
48	Diseases of Women	Dr. Haven	City Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	20.00
49	Diseases of Women	Dr. Washburn	Women's Free Hospital	12	July 1	Aug. 8	Mo. Th.	3.30	20.00
50	Diseases of Women	Dr. Washburn	Women's Free Hospital	12	Aug. 12	Sept. 19	Mo. Th.	3.30	20.00
51	Diseases of Women[1,13]	Dr. Burrage	St. Elizabeth's Hospital	13	June 3	July 15	Mo. Th.	10	25.00
52	Diseases of Women[1,13]	Dr. Burrage	St. Elizabeth's Hospital	13	July 18	Aug. 29	Mo. Th.	10	25.00
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54	Hygiene	Dr. Harrington	Medical School	36	July 1	Aug. 10	Daily	3	30.00
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56	Practical Therapeutics[1]	Dr. Tenney	Boston Dispensary	20	July 8	Aug. 21	Mo. We. Fr.	10	20.00
57	Clinical Pathology	Dr. E. W. Dwight	City Hospital	14	Aug. 1	Aug. 31	Tu. Th. Sat.	10	15.00
58	Clinical Pathology	Dr. E. W. Dwight	City Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	15.00
59	Clinical and Abdominal Surgery	Dr. Elliot	Mass. General Hospital	21	June 3	July 19	Mo. We. Fr.	11	15.00
60	Clinical Surgery	Dr. F. B. Harrington	Mass. General Hospital	18	July 2	Aug. 30	Tu. Fr.	11	20.00
61	Surgery of Children[1]	Dr. Lovett	Children's Hospital	13	Aug. 17	Oct. 1	Tu. Sat.	4	20.00
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PAGE

ORIGINAL ARTICLES.

PROSTITUTION. THE RELATION OF THE EXPERIENCE OF EUROPE TO THE SOLUTION OF THE PROBLEM IN BOSTON. *By Arthur K. Stone, M.D.* 29

THE TREATMENT OF SCLEROSIS, OF VARIOUS FORMS OF PARALYSIS AND OTHER NERVOUS DERANGEMENTS, BY SUGGESTION. *By Hamilton Osgood, M.D.* 32

CLINICAL DEPARTMENT.

A CASE OF ADDISON'S DISEASE. *By Kenelm Winslow, M.D.*, Visiting Physician, Newton Hospital, Newton, Mass. 36

MEDICAL PROGRESS.

REPORT ON THERAPEUTICS. *By Francis H. Williams, M.D.* 37

On the Effect of Giving Levulose and Inulin to Patients Suffering from Diabetes Mellitus. — Levulose for Diabetic Patients (its Partial Conversion into Glucose). — The Danger of Anesthetizing Diabetics. — Physiological and Therapeutical Action of Chlorolose. — One Hundred Cases of Diphtheria Treated with Behring's Serum. — The Treatment of Delirium Tremens during an Alcoholic Service in Bellevue Hospital. — A Case of Chronic Poisoning from the Use of Trional. — The Action of Trional.

REPORTS OF SOCIETIES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. *J. G. Mumford, M.D.*, Secretary 40

The Treatment of Sclerosis, of Various Forms of Paralysis and other Nervous Derangements, by Suggestion. — Prostitution: the Relation of the Experience of Europe to the Solution of the Problem in Boston.

AMERICAN SURGICAL ASSOCIATION. NEW YORK, MAY 28, 29 AND 30, 1895 45

Discussion on the Operation for the Radical Cure of Hernia. — Result of Treatment of Hypertrophy of the Prostate. — Clinic at the Bellevue Hospital. — Clinic at the Presbyterian Hospital.

EDITORIALS.

THE LAST SICKNESS OF NAPOLEON BONAPARTE 47

THE TREATMENT OF EXOPHTHALMIC GOITRE BY THE ADMINISTRATION OF THYMUS GLAND. 48

MEDICAL NOTES 49

Hering succeeds Ludwig. — A Fatal Overdose of Chloral. — Death of a Distinguished Woman.

Boston and New England.

Acute Infectious Diseases in Boston. — A Step in Advance. — Commencement at the Medical Department of the University of Vermont. — The Maine Medical Registration Board.

New York.

Death of Dr. Aronson. — The Staff of the Harlem Hospital. — The Floating Hospital. — A Generous Subscription. — A Dispensary for the Long Island College Hospital.

CORRESPONDENCE.

THE ILLINOIS STATE BOARD OF HEALTH AND THE NORTHWESTERN UNIVERSITY WOMAN'S MEDICAL COLLEGE. *J. W. Scott, M.D.*, Secretary 51

MISCELLANY.

AN ACT TO REGULATE THE REGISTRATION OF BIRTHS IN RHODE ISLAND 50
BUFFALO BILL AND THE SICK CHILDREN 50
METEOROLOGICAL RECORD, JUNE 29, 1895 51
RECORD OF MORTALITY, JUNE 29, 1895 51
ARMY AND MARINE HOSPITAL SERVICES 52
ERRATUM 52
RESIGNATION 52
RECENT DEATH 52
BOOKS AND PAMPHLETS RECEIVED 52

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

FOR PROFESSIONAL CARDS, MEDICAL SCHOOLS, ETC.,

See pages 16, 17, 18 and 19.

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See Advertisement of

VINOLIA SOAP,

PAGE 4.

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See Advertisement on Page 13.

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Original Articles.

PROSTITUTION.[1]

The Relation of the Experience of Europe to the Solution of the Problem in Boston.

BY ARTHUR K. STONE, M.D.

Prostitution is a subject which forces itself upon the attention of every member of the medical profession living in a large city. It is one which every man is liable to be called to give some opinion upon in these days of reform and social evolution, and that opinion, it seems to me, should be given with some knowledge of the facts of the case. It is not my intention in the following paper to discuss the ethics of the subject, or to theorize about the necessity or non-necessity of the prostitute, but to take up the matter as it presents itself to us as a social evil, present with us, and one which should be met and dealt with according to some fixed policy.

I do not expect to settle the matter or to change men's minds if they are already made up upon a definite basis, but I hope to point out some of the considerations which must be known and understood before any really judicial opinion can be given. If I can set a number of practical medical men thinking seriously upon this problem, I shall have accomplished my aim.

One thing I would say, in passing, to the moral reformers, and that is, that their attention should be directed towards the men and not towards the women; for so long as there are men who wish for illicit sexual gratification, so long will there be women, either for love, for hire, or from compulsion to supply the demand.

As to the sources of information which I have made use of in this paper, I am indebted to the great interest in the subject in Europe during the years of 1890–92. At that time a large number of government and medical commissions were appointed, and made reports after thorough investigation of the subject; and from these reports we can get a very good idea of the state of mind existing in Europe, and of the plans that were proposed and the conditions presenting themselves in various parts of Europe at the beginning of the present decade.

One of the most frequent answers made by medical men to one seeking knowledge upon the subject of prostitution is, "Oh, prostitution is a necessary evil, and I believe that some control should be exercised to prevent the spread of disease, just as they do upon the continent of Europe." Let us first consider how much control is exercised in Europe. England alone of the European nations makes no pretence to government or municipal control, and not much pretence to check the openest solicitation — many of the principal streets of London being simply thronged after dark with women who seize upon any passing man and almost compel him to go with them.

All the Continental cities exercise a certain amount of control over some of their prostitutes, and for the most part keep the rest under such restraint that in no place is there such open solicitation as is to be found in Picadilly and Regent Street in London. Yet in Paris solicitation does take place on the open streets. But nowhere is the number of women under police control anything like the total which are to be found in the ranks of the daughters of Lilith. In all European cities there are two varieties of prostitutes who are under police control: first, those who live in houses that are chartered and licensed; and, second, those who are inscribed, but carry on business at their own apartments, being as it were free lances. These latter have books in which their names and histories are inscribed; that is, their police examinations, together with the length of their stay, their disease and treatment, when they were last in the hospital. In some places these women have to report at certain times to police headquarters for examination, and at others they can be simply summoned whenever wanted. In some cities there are certain cafés where they are allowed to solicit patronage and other women are not permitted the same privilege. They must, however, confine themselves to these places. Then there are in some places certain recognized houses of assignation, but these seem to play a rôle of but little importance in the general problem. The women in the licensed houses are examined at intervals of varying lengths of time; before 1892, for the most part at the police-stations and at the expense of the proprietors of the houses. Solicitations from the windows or sidewalk is not permitted by law for these houses. In Berlin, says Blaschko, the women were to be examined every eight to ten days; as a matter of fact, they were not examined oftener than once in two weeks.

The proportion of prostitutes under police control may be judged from the following statistics: The Prefect of Police in Paris admitted to Professor Dr. Lassar, of Berlin, who was sent by the German Government to investigate the methods of control in the city of Paris, that there were fully one hundred thousand prostitutes in Paris, and I cannot see that this estimate includes the large number of girls working in restaurants and wine shops, but simply women who have no regular means of support except their profession. There were in all Paris in January, 1888, only sixty-seven licensed houses. Many of the houses of Paris, are in a great measure kept open for the edification of travellers who are taken to see the sights of the wicked city, and sexual intercourse is rather of secondary importance. The far greater part of the girls that are to be found at such places as the Bullier and Moulin Rouge and many of the cafés, concert and dance halls are uninscribed; the one thing that they fear and will do most to avoid, is that they will be taken to the police-station and be enrolled and from that time be under police surveillance, and it is only when they have become so hardened and shameless that they become public nuisances that they are arrested by the police and inscribed and subjected to police examination and control.

In Belgium, with its 6,000,000 people, there were, according to Dr. Fiaux, only 96 licensed houses with 486 inmates, while the inscribed prostitutes numbered 661. At the same time there are 585 women known to be prostitutes by the police but not inscribed by them. This estimate makes no consideration for the government prostitutes supplied for the army. Thus it will be seen that the number of women under police control is very small indeed; and this number, although I did not find any absolute figures, is taken to be about the proportion that exists throughout the other cities in Europe, as was borne out by the fact that it was everywhere recognized that some measures should be taken to secure greater control of the prostitutes.

---

[1] Read before the Boston Society of Medical Improvement, April, 1895.

The next question which we need to investigate is whether the existing control does what it promises to do, that is, give the visitor to the licensed house of prostitution or to the inscribed girl the assurance that he will be free from the danger of venereal disease. To this point I shall again quote Fiaux in regard to his investigations in Belgium. In the month of January, 1889, 287 licensed prostitutes of Brussels were examined, only to find 66 with venereal disease, 37 of them being syphilitic, while the police reports of the decade 1870–80 show a percentage of 50 per cent. to 60 per cent. diseased among the inmates of houses, and about 33 per cent. among the inscribed women. Professor Bergh, of Copenhagen, is quoted as having similar experience, and the statistics for 1886–90 show that the percentage of inmates for licensed houses has been nearly twice as large as among the inscribed women. Neisser, of Breslau, with several assistants, examined 573 prostitutes; and in 216 he found gonococci present (37.6 per cent.). Dr. Passavant, of Paris, is quoted as saying that out of every hundred inscribed women 35 to 50 per cent. have venereal disease. Dr. Fiaux shows that in Belgium, in 1881–1889, one-half of the inmates of the licensed houses had to be sent to the hospitals for treatment with venereal disease, of whom about 50 per cent. were syphilitic. Of inscribed women, about one-third were treated at the hospitals, about one-sixth of these being syphilitic. Laser, in an extensive examination of prostitutes for the presence of gonococci, found in the examination of the urethra of 353 patients that the gonococci could be demonstrated 112 times, although in four-fifths of these cases there was no macroscopical evidence of gonorrhea. Several of these patients had been discharged from the hospitals as cured.

Some of the figures in other cities are as follows:

Lyons, 1880–1885: percentage of diseased inmates of licensed houses 85 per cent., inscribed 40 per cent.

Brussels, 1881–1889: inmates 50 per cent., inscribed 33 per cent.

Rotterdam: inmates 35 per cent., inscribed 10 per cent.

Mireur, of Marseilles, stated that he found out of every 100 cases of venereal disease which came to his notice that 62 came from houses of prostitution.

Kaposi states that in 1888–1889 there were 1,770 inscribed women in Vienna; of these 841 were treated for venereal disease; 1,634 were arrested at various times for disorderly conduct, 477 being punished. Of uninscribed women 1,332 were arrested for disorderly conduct, of whom 170 (or 12 per cent.) were found to be diseased. There are said to be 25,000 prostitutes in Vienna.

In Hamburg, the *Allegemeine Frankenhaus* reports that 50 per cent. of the venereal disease originates in houses of prostitution, 10 per cent. with the inscribed women, and credits the remainder of the cases to Altona, a small city lower down the river. Nominally, houses of prostitution have been abolished in Hamburg; in reality, they exist.

Blaschko says that of 2,000 private patients with venereal disease 60 per cent. originated with prostitutes, 10 per cent. with shop-girls, 4 per cent. with bar-maids.

The statement that the proportion of diseased women among the recognized prostitutes is somewhere between 30 and 50 per cent. is generally accepted as being the state of things throughout Europe.

In regard to the question whether or no there is an actual increase of syphilis at the present time the writers seem to differ. Summing up the evidence, there appear to be a few who believe that syphilis is on the decrease, while the majority are convinced of its increase. In Paris, Dr. Vidal of the Hôpital St. Louis, which is the centre of skin diseases of all Paris and France, states that the number of syphilitic patients is daily increasing. Prof. Léon le Fort, of the Hôpital du Midi, and Professor Fournier and Dr. Mauriac all expressed the same views. On the other hand, Dr. Weber, director of the Val de Grace Military Hospital, states that the amount of venereal disease among the soldiers is decreasing. The same seems to be true among the Belgian army. Here it is probably owing to the government furnishing women for the soldiers.

In Berlin, Dr. Blaschko believes that the amount of venereal disease has been decreasing in Berlin since 1856. But Professor Wolf denies that Blaschko's statistics in this regard are correct. Also, Dr. S. Neumann takes the same ground, and denies that syphilis is in retrogression.

The general opinion in the Berlin Congress was that venereal disease was on the increase and that measures must be taken to check its advance. Blaschko in his paper stated that, from the standpoint of public hygiene, no benefit was received whatever from the control as then practised. A commission consisting of Virchow, Blaschko, Meyer, Strassman, Langerhaus, Villaret, B. Frankel, Pistor, Lewin, S. Neumann, B. and M. Wolf were appointed to consider the subject; and they reported that the sanitary conditions and measures existing in Berlin for the prevention and treatment of venereal disease were insufficient. And this was the general opinion arrived at by all the men throughout Europe who had the investigation in hand, that the protection did not protect, neither did the control check the advance of the evil.

Having arrived at this definite conclusion, the next point was what should be done. Here the opinions varied greatly. One of the French Ministers told Lassar that the conditions varied so in the different cities that no general law was possible, but that each municipality must deal with the problem as it was presented to it. Another French Minister, Gayot, who has given this subject a great deal of study and written a book upon prostitution, has reached the conclusion that abolition is the proper thing and prostitution is a moral and personal question and that there was no reason why it should be recognized by protecting law, taking the position that has so far been held in England and America.

In the Tenth International Congress, at Berlin, the opinion was for the most part expressed in favor of segregation of all prostitutes, insisting that they should live in a special quarter and in licensed houses where they could be under strict surveillance, no solicitation to be allowed, and any one being found acting as a prostitute to be judged as one and treated accordingly; also any one treated for venereal disease to be also considered as a prostitute; all the women to have a semi-weekly examination at a medical bureau at the expense of the city, and any one found having venereal disease to be sent to the hospital. Felix, Drysdale, Heinsinger, and Crocq dissented from the majority, expressing the decided opinion that the centralization of prostitutes was a source of danger to the rest of the community, and especially the intact girls, who would be exposed to greater temptations than under the existing conditions, and affirming the utter impossibility of removing all prostitutes to any special quarter of the city or punishing them by legal means, as the boundary between free love and prostitution is absolutely undefined.

Contrary to the opinion expressed in the Berlin Congress, it seems to be generally held and supported by statistics that the houses of prostitution are much greater sources of danger than the inscribed women; the statistics given tending to show that the number of infected women in the licensed houses amounts to about 40 to 50 per cent., while the number among the inscribed women is under 30 per cent.

In very many of the large cities the number of licensed houses has steadily fallen, for example, Paris, 1850, 212; 1880, 133; January, 1888, 67. In St. Petersburg, in the 14 years from 1872–1886 the number fell from 220 to 82; at the same time the inscribed free women increased from 2,500 to 4,500. In Belgium there has been a steady diminution in the numbers of houses and inmates, so that now there are only about one-third as compared with twenty years ago, all of this going to show that there is a tendency for this form of dissipation to go out of fashion. This, together with the fact that the women of the licensed houses from their more frequently indulging in copulation and their inability to choose their companions and their lack of self-responsibility, are much less careful of their bodies and hence more apt to be diseased. In Antwerp it has been seriously proposed to do away with the seven licensed houses and to have only inscribed free prostitutes.

So it will be seen that there are no absolute methods which can be said to render any successful solution to this difficult problem. But if any one will stop to consider for a moment, it will be seen that rating as a prostitute every one that is found in any way diseased or soliciting is only possible in a government of the most paternal kind, backed with inquisitorial powers.

All the writers upon the subject recognize the fact that there are not enough hospital accommodations for the treatment of the diseased prostitutes. In Vienna it was urged by Neumann that a large hospital be built for this purpose, any prostitute with syphillis to be committed for at least two years, those with gonorrhea until recovery. It is argued that any such regulation as this would tend to extend rather than restrain the spread of syphilis, for the great fear of incarceration would cause infected women who were inscribed to conceal their trouble as long as possible, to leave a town where they were known for another where they could work unmolested, because unknown; then, too, the utter impossibility of having hospital accommodations large enough to carry out such a plan must be clearly realized. And if there were not prison hospitals there would be no way to keep the women from plying their profession as now, for they would have to live even though diseased.

We see from the above hasty and imperfect sketch that neither of the plans for the control of prostitution is perfect; for in Vienna where the inscribed free prostitute has specially flourished the general opinion seems to be that the system is inadequate and that all prostitution should be confined to licensed houses, while in Belgium the contrary opinion has gained ground, that the licensed houses are the most dangerous, and safety of the masses is best secured by the controlled free prostitute.

In the consideration of the conditions of the subject on the continent of Europe I have purposely omitted all reference to the army and its statistics. Here there has probably been a distinct gain in diminishing the number of cases of venereal disease, but the methods by which this has been reached are of no interest to us at the present time, as we do not have the problem of thousands of soldiers quartered in our great cities.

The different standard of morals must always be taken into consideration in applying deductions from European society to our own, also the different position in which women are regarded on the Continent and in New England. I will not attempt to enlarge upon this point, but would ask the gentlemen always to bear this in mind in speaking or writing upon the subject.

To come to our own city of Boston. Before the change in administration in our police commission the city had a most unenviable reputation. A very large number of houses of prostitution were in full force and did a most thriving business. The traffic in young women was extensive, and the agents of several societies, notably the Traveller's Aid Department of the Y. W. C. A. had to be constantly on the watch to prevent the capture of young women arriving from Europe, the provinces, and the country. The houses ran night and day, and no period of rest from duty was allowed to the majority of the inmates during any part of the month. At the same time, I am told by those who were investigating the subject at that time, there were houses where it was just as safe for a visitor as though the house had been licensed and been under government control. In all the houses liquor was sold illicitly, and even in those unrestrained days any one failing to call for liquor was regarded with suspicion. Robberies were frequent, and the most disgraceful orgies were common. Many of the so-called "parlor houses" were run largely for the purpose of robbery, by means of selling wines and liquors at extortionate prices to drunken patrons, the sexual part being of secondary consideration. Since the persistent raids which followed the advent of the present Chairman of Police Commissioners into office a large proportion of the houses have been closed and remain closed. The agent of the Traveller's Aid Society, Miss Blodgett, states that there is less attempt being made to entrap the newly arrived girls; though this is probably in a large measure due to the persistent watchfulness of Miss Blodgett and others. The Rev. Mr. Tobey of Berkeley Temple states that so efficient has been the action of the police in the city as a whole, there is only about one-third of the prostitutes engaged in their profession that there was eighteen months ago, and is prepared to support his assertion by statistics. On the other hand, in other quarters of the city hitherto perfectly free from the presence of such women small groups of prostitutes have appeared, and are causing their neighbors a good deal of trouble and apprehension. The greater part of the prostitution that is carried on in the city at present, outside of that promiscuous intercourse that exists among the lowest strata of society, is now carried on in a free-lance way, and not from specially organized houses. This is vouched for by the agents of various societies who have the doings of many of the keepers of such houses under surveilance, and know that they have either left the city or are not engaged in running houses of prostitution, though many are waiting for the first signs of relaxed activity on the part of the police to open their houses once more. Some of the girls have gone to their homes, and many others have been found employment, and their movements are under the observation of the agents of various societies.

Is this for the better or worse? Has the dispersion of the prostitutes among a class of the people formerly free from their presence, and the possible increased danger to women from the assaults of men thus deprived of their customary sexual relief, made a condition of things that is worse than the former free system? The latter argument does not seem to me to have any weight. The dangerous classes live so that it is possible for them to indulge in sexual intercourse at all times, and they cannot from the very necessity of their existence support the houses of prostitution and are consequently not affected by the change. If the fact that prostitutes are to be found in new quarters tends to raise a strong public sentiment among our all too easy-going people so that they are forced to recognize that this is an evil which must be met and dealt with in some way or other, not a mere abstract question which in no way concerns the average family or the average citizen, then I maintain that the evil of the dispersion is overbalanced by the good. On the other hand, the closure of the houses has removed a large amount of temptation from weak men, many of whom go to such places not for any purpose of gratification of strong sexual passion but simply "with the boys." Once there, they are filled with alcohol, robbed, and given disease. Further, the supply now exceeding the demand, there is less attempt to entrap young and previously innocent women for immoral purposes, neither is there such a free and easy opening for a girl made desperate by lack of work or previous disgrace to enter upon the life of a public prostitute, and hence it is much more easy for the agents of the numerous societies to get hold of her and keep or make her a respectable member of the community. Thus, and thus only can the number of prostitutes in our midst be made very gradually to diminish. This decrease could be materially hastened by lessening the number who are born prostitutes; for by castration and ovariectomy the persistent criminals and chronic paupers should be prevented from reproducing their kind, the female portion of which are practically born prostitutes.

In conclusion, I would say that I have looked over the discussion of the Contagious Disease Acts that took place in England during the period of 1870–1875, and with very few changes the conditions were exactly the same as at the present time. There was the same amount of discouraging statistics from Paris and other Continental cities, the same demand for more frequent examinations and the same report of the impossibility of controlling all women engaged in the profession; the same statements that the number of licensed houses was decreasing, by some marked with apprehension. In fact, one of the greatest arguments which has been put into the hands of the non-recognition party is this fact, that at the end of twenty to twenty-five years of practical application Europe had, according to her own report, by no means solved the problem of control or diminished the spread of venereal disease. New methods, perhaps better, certainly more inquisitional, have since been instigated, the results of which we have no means of knowing and cannot have for some years to come; but from their very diversity they furnish us with no indication of any sure course that here in Boston we should follow. There seems to be no other way open to us but to wait for a decade at least, until we find out what method offers the greatest chance of success in obtaining a real control over this evil. In the mean time it seems mandatory for us to pursue our present policy of repression of the evil to its smallest possible limits. And this can only be accomplished by a vigorous public sentiment which shall support enthusiastically the strong arm of the law in its work of repression under existing laws and shall make the increase in the ranks of prostitutes as small as possible — by every means which shall check the traffic in girls, by education of both boys and girls in our homes and schools, by a law which shall raise the age of consent, and by removing from the chronic criminal classes the power of reproduction of their species. At the same time the spread of venereal disease should be combated by hospital accommodations for those who are now debarred from proper medical care and treatment.

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THE TREATMENT OF SCLEROSIS, OF VARIOUS FORMS OF PARALYSIS AND OTHER NERVOUS DERANGEMENTS, BY SUGGESTION.[1]

BY HAMILTON OSGOOD, M.D.

In his work on Suggestion, Bernheim reports a case (Observation VII) of disseminated sclerosis, which he treated by suggestion with such favorable results, that, after a few sittings the patient recovered the use of his limbs, trembling of the hands ceased and the man became a waiter in the wards of the hospital.

Elsewhere, Bernheim offers a reasonable explanation of this result. His theory is that the tissue of the spinal cord is not totally invaded by the sclerosis at the site of its existence; that by means of tissue as yet untouched by the pathological condition, it is still possible for the nerve force to pass on. This is clearly shown by the restoration of power to the arms and legs of the patient in question.

This explanation seems logical and natural. Bernheim's patient continued six months in this condition of amelioration after the treatment had been discontinued. At the end of that time the former symptoms gradually returned and suggestion was not again applied.

The practical result of suggestion during sleep is an invigoration of functional power. A patient suffers from pain in the head, or in a joint, and there is a loss of function. The pain is relieved by suggestion and, unless it be deformed or inflamed, the patient can at once use the joint in a natural manner and again apply his mind to necessary work. Function has been restored. There are innumerable and similar illustrations.

In a case of sclerosis, or other affection of the cerebro-spinal axis, I have no doubt that the symptoms are exaggerated, at all events exacerbated, by the mind of the patient and that, in consequence, there is a loss of functional power which, in the earlier stages of the disease is inconsistent with the actual condition of the tissue involved. That is to say, the actual functional possibilities are disturbed by the mental depression of the patient. In other words, but for the feeling of hopelessness which has taken possession of the mind of the patient, he might walk more naturally and use hands and arms with more ease.

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[1] Read before the Boston Society for Medical Improvement, April 1, 1895.

Suggestion will not only arouse functional power but will stimulate mental vigor and displace depression by hope. So long then, in the cases in question, as there exists a possibility of the passage of nerve energy by means of tissue still unharmed by the pathological process, the physician's duty seems clear. Stagnation of hope and of functional vigor in the patient should steadily be prevented. Let him, however, fall into hopeless despair, acquiesce even tacitly in his opinion that he has become helpless, incurable, useless, and he will simply go on from bad to worse. Such a state of mind on the part of the patient and such acquiescence on the part of the physician will hasten the injurious effects of the disease.

It is necessary only to watch the mental condition of such a case to be convinced of the harm which the unsupported mind can create. Any physician who has become habituated to the application of suggestion and whose custom it is to watch his patient's mind as well as his body, is surprised when he observes the indifference of the average physician to the mental condition of his patient.

There is nothing in life stronger than habit, whether muscular or mental. If the thought that he is helpless and that there is no hope for him be allowed to become a *habit* in the mind of a patient, it will be converted into injurious results as surely as the thought of a peach during thirst, will excite the salivary glands, and both results will be involuntary and unconscious.

In 1893, at the Congress of Psychology in London, I heard a distinguished French professor read a paper on "The Neglect of Mind by Physicians."

A few months ago while in conversation with Bérillon, of Paris, he suddenly exclaimed, "Medicine is not taught in Paris." "What do you mean?" I asked. "Nothing is said about mind," he replied.

Still, almost unconsciously, thinking physicians are daily resorting more and more to the use of suggestion. This subtle power is slowly insinuating itself into the practice of medicine. Those physicians who oppose the direct use of a proper and intelligent application of hypnotic suggestion, believe they are correct in doing so. But practically they are actually unfamiliar with its benefits, and they are wholly mistaken in their assertions that it is dangerous, useless, humbug, etc. This treatment cannot be judged theoretically. One may theorize his life long about swimming, but, practically he has no right to an opinion until he has plunged in and has swum with his own arms and legs. There are so many illustrations of this purely theoretical scepticism in medicine, with reference to remedies which were thoroughly accepted when once they had been *practically* tried, that I need not adduce them.

With this digression, which was almost involuntary, I turn to an interesting case similar to that reported by Bernheim and already mentioned. The patient was referred to me by Dr. Scudder. Her history was given me by the patient herself.

A young lady, age twenty-two years, single, was seized, four years before I saw her, with numbness in the posterior aspect of the legs; her ankles turned at every step; she was very weak; was fatigued by every movement; was very irritable. The family physician pronounced the trouble irritation of the nerves.

As months passed on the patient became worse. When three months had elapsed she could not walk at all, and then had no control over either bowels or bladder. This condition passed off and, two months later, reappeared. The hands became numb, the fingers were spasmodically "drawn back"; there were severe headaches; patient was sick and dizzy. During one month she lost control of the eyes. Had diplopia. Could not swallow liquids. Talking became difficult. A specialist pronounced the illness lead-poisoning. Treated for that ailment, patient became better. Later she was worse again. Went to the Adams Nervine Asylum. Improved a little, then fell into a still worse condition. The disease was now said to be "spinal trouble."

Twelve months having elapsed, patient again had improved. Eighteen months from first attack was worse again, and failed rapidly. Meanwhile she lost the use of her arms; then regained power over them. Finally, the difficulty settled in the legs, and a specialist and the family physician diagnosticated lateral sclerosis. Two other physicians thought the ailment hysteria; and when I first saw the patient there were undoubted hysterical symptoms. But the patient could move neither legs nor feet. Lying upon the back and in the sitting position she could not lift nor move either foot in the least and it was difficult for me to flex the legs. She had not stood once during the two previous years. The knee-jerks were much exaggerated and the ankle-clonus was very marked. There was no atrophy, the legs being large and heavy. Patient enjoyed perfect use of hands and arms. Organs and periods normal. Constipation moderate. Suggestion induced merely the first stage of somnolence, but the patient was very suggestible. This relation of one condition to the other is very frequent. During the waking state strong moral suasion was also used.

Patient began almost at once to move the legs, and her power over them increased daily. After the lapse of two or three weeks, whether sitting or lying, she could lift either leg normally. Gradually she moved about the house (St. Margaret's), went daily to the bath-room and finally did so without her cane. Meanwhile constipation had disappeared.

After seeing the patient almost every day for about seven weeks, I sent her home with the promise that she would steadily improve. By this time the knee-jerks and especially the ankle-clonus had become notably diminished. In fact, it became difficult and nearly impossible to create any sign of spasm in the foot.

Referring again to the hysterical aspects of the case, I will frankly confess that notwithstanding the long-existing loss of leg-power, the ankle-clonus and other abnormal reflex symptoms, I found it difficult and puzzling to account for sclerosis in view of the following points, namely: total absence of the atrophy in spite of the very chronic nature of the disease; almost entire disappearance of exaggeration in the reflexes under suggestive treatment, and, further, the curious fact, mentioned by the mother of the patient, that on several occasions, during a period of perfect helplessness in waking hours, the invalid left her bed and walked naturally during her sleep, or in a condition of somnambulism. The mother is absolutely positive on this point, for she waked her daughter and forced her to return to her bed, the power of walking then abating. Nevertheless, as will be seen later, there finally was discovered an indisputable proof of the existence of sclerosis.

After her return to her home the patient wrote me very frequently, and always in a tone of cheer and hope. This evidence of a beneficial mental change was a wholly new thing as well as a source of great satisfaction to the patient's mother. During the next few months there was a slow but positive gain. Evidences of improvement were, however, somewhat intermittent. On a given day the patient could walk up and down stairs without help; on the following day she required assistance. One day she could enter a carriage unaided; on the next day it was necessary to lift her. On one day she appeared so able that her lack of power on the succeeding day led her friends to think she was shamming. She went about the house with the aid of a chair which she pushed before her.

She went out of doors in a wheeled chair, and finally when she had left the chair, seated herself upon the ground to pick violets, which she sent to me with a note, in which she expressed her happiness that she could do this, and afterward reseated herself in her chair without help; it became evident, notwithstanding the fact that the legs had not wholly recovered freedom, that the gain had been large.

During the next three months, being absent from the country, I did not hear from the patient, but her mother assures me that there was no loss either in power or mental cheer.

A note from the patient's mother says: "Fannie was able to go up and down stairs on her feet several times last summer. She took hold of the bannister and went up alone although it was hard for her. Sometimes she could walk down slowly; sometimes she would sit and slip down one stair at a time. I have known her to walk *well* when asleep though she could not walk without assistance when awake. But she has not done this since you have known her, not later than January, 1892."

In December last the patient fell ill, and died of pyelo-nephritis. The autopsy revealed sclerosis in various districts of the spinal cord touching which I hope that Dr. J. J. Putnam will give further and more exact information.

In view of this revelation, the recovery and increase of ability to use the legs and the almost entire disappearance of the exaggerated character of the reflexes, may fairly be attributed to invigoration of function in response to suggestion. Had the patient continued to live, it is possible that unconquerable loss of power would some day have resulted. Nevertheless when we consider the fact that all other treatment had been abandoned as useless and that, when she came under the suggestive treatment, the patient was helpless, the hope and amelioration of symptoms conferred by this means of relief become sufficiently apparent. Van Renterghem and Van Erden report a similar case but in which the results produced by suggestion were not so effective.

A Case of Paraplegia.— After months of treatment in a Lynn hospital, a young woman, age twenty-three years, single, was admitted to the Home for Incurables, naturally as an incurable. Her ailment was paraplegia which had made such progress that the legs were atrophied to a degree which I have never witnessed in any other case. In brief, there was no muscle on the bones of the legs, and they hung from the hips like sticks, immovable and helpless. The condition was due to a heavy fall into the sitting posture. The patient, of course, could move neither legs nor feet, which it was constantly necessary to arrange and place for her. When put upon her feet the patient collapsed and fell to the floor. She was badly constipated, had irritable bladder, spinal and cranial pains, no ankle-clonus, slight exaggeration of the jerk of one knee. There was marked hysteria and mental irritability.

Here, surely was an unpromising case. But the patient proved to be an excellent subject; and on the 24th of January, 1890, I made my first suggestion. The patient fell into a profound sleep. Lifting one of her legs I suggested that she could not put it down. The limb remained in air a few seconds. This not only gave me hope but revealed an excellent means of diagnosis, for it became evident that the lesion of the spinal cord was largely if not wholly functional. The main argument against this supposition was the extreme and unusual degree of atrophy. After the necessary suggestion had been made the patient was aroused. She could then bear her weight in the standing position. The knees occasionally yielded, but the patient showed more strength than had been evident during two years previously, and required little more support than was needed to steady her.

January 28th. During sleep patient's leg remained a longer time than before in raised position. After waking stood unaided twenty seconds.

January 31st. Improvement steady. Suggestion.

February 4th and 9th. Fourth and fifth treatments. Bladder and bowels show better condition. Patient can cross the legs.

February 14th to 28th. Five additional sittings. Patient can stand, lift the legs, cross and uncross them with ease.

The treatment was applied semi-weekly until April 30th, by which time patient was walking with help. Bladder normal. Constipation gone, spinal and cephalic pain vanished, legs increased in size.

February 11, 1891. A lapse of nine months since I had last seen the patient. During the interval she had lost none of the new power, and was stronger on her feet; was less hysterical. Recommenced the treatment by suggesting that she would walk to church on Easter Sunday. This I obliged the patient to repeat after me during sleep. When that Sunday came patient did walk to church and by May 1st — for I again continued the treatment semi-weekly until that time — she went everywhere with ease. Meanwhile the legs had regained their normal size and strength. Patient in fine condition. Save an occasional indication of hysteria during the menstrual epoch nothing remained of the original ailments. To-day the young woman is an assistant in the Home and is in good health. Once before I published a meagre outline of this case but the final result had not then been reached.

Case of Paraplegia from heavy blow upon the head, fracturing the skull of a young man who was admitted to the Home for Incurables after having spent six months in the Massachusetts General Hospital. His body was supported by iron frames which enclosed the legs. By the additional help of crutches he could move slowly over short distances. There was cystitis and absolute incontinence of urine, a urinal being indispensable. Patient suffered from intense pain in right foot which no treatment at the Massachusetts General Hospital was able to relieve. A cradle was necessary to prevent pressure of bed clothing which patient could not bear.

He proved very suggestible, slept profoundly, was totally anesthetic and subsequently, while asleep, was unmindful of painful operations such as the curetting of the cavity of an old abscess. The first suggestion wholly and permanently relieved the pain in the foot. Subsequent suggestions gave steadily increasing power to the legs. At the end of three months the iron frames were discarded, crutches alone being sufficient and patient could walk with a crutch in each hand. The suggestions were renewed after a lapse of nine months and continued as before, twice weekly, during three months. No treatment has been given during the past two years. The cystitis meanwhile slowly decreased and to-day incontinence is the only sign of vesical disorder. The patient wears no splint, walks easily with one crutch held in the hand, is in fairly robust health and does the lesser carpenter work of the house.

Paralysis of Tongue. — February 7, 1890. Six months ago a lawyer experienced a slight apopleptic attack, which, however, caused unconsciousness and a fall. Now, the lingual muscles are embarrassed. Indistinct enunciation. Patient obliged to abandon pleading in court. Right arm very weak. Writing nearly impossible. Patient chronically constipated.

Following the first suggestion the tongue acted with greater freedom; articulation clearer.

February 8th. The beneficial change remains. Second suggestion applied.

February 11th. Greater freedom of articulation is very noticeable and the right hand is more flexible in the use of a pen. Third suggestion.

February 12th. Fourth treatment. Improvement continues.

February 18th. Lapse of one week. Very marked gain in freedom of utterance; arm much more vigorous; bowels freer than they previously have been in ten years. Final suggestion applied. Patient began again to plead in court. When I last saw him, two years later, there had been no relapse.

Case of Paralysis Agitans in a weak old man of seventy years, with great lack of leg-power and coördination, the head drooping, spine bent forward, hands in constant agitation. This patient received large comfort from the suggestive treatment and begged for it. Following a suggestion the agitation of the hands disappeared either partially, or wholly, during several days. Walking was stronger, patient held himself erect, the forced adduction of the knees was relieved and there was ability to face about in the standing position which, before he received the treatment, the patient could not possibly accomplish. He declared that during the sleep and after waking he was conscious of a warm current of stimulation in arms and legs. At the end of three or four days this renewed vigor gradually disappeared to be restored by a fresh suggestion. In this case the treatment gave amelioration and comfort which no other means could have supplied. The general health of the patient improved and undoubtedly his feeble hold upon life was thus prolonged.

A Case of Hemiplegia. Male, aged sixty. Patient able to move about a little. Could not lift the paralyzed arm above a level half-way between hip and shoulder. Grip very feeble. After the first suggestion patient voluntarily said that he felt a hot sensation in arm and leg of affected side. Could raise the arm to the level of the head. After second sitting could raise the arm straight above the head and felt stronger on the weak leg.

Treatment continued at intervals during three months. Patient gained large control of the arm, had a stronger grip, could walk long distances.

Some months later this man died of an intercurrent disease. Bernheim has reported similar cases with even better results.

Case of Paraplegia, due to a fall from one story to another through a hatchway, ten years before I saw the patient, a gentleman, aged sixty. He received the suggestive treatment two or three times weekly during a period of five months, advancing slowly but steadily to a more manageable condition of the legs which felt lighter and more alive. I have not seen this patient for two years, but he writes that some months after I last saw him he became weaker again. In such cases amelioration naturally is all that suggestion can effect.

Case of Tremor of the Hands, in a lad of twenty years, which prevented work of any kind. Patient had formerly used tea and tobacco excessively, had masturbated much and was mentally agitated. Suffered from insomnia. Was treated by suggestion once weekly during five weeks. The first treatment quieted the hands and wholly relieved the insomnia. The effect was intensified by each successive sitting. After the fifth suggestion patient could strike with unerring exactness a given spot on wall-paper with the point of a pencil held by the tips of the fingers. Patient said he had abandoned the habit of masturbation. Recovery and no relapse.

Case of Tremor of the Right Hand, with loss of muscular power, insomnia, spinal pain, incontinence of urine, pain in walking in a lady aged sixty, married, in whom there was not a vestige of hysteria. She received sixteen treatments by suggestion, which relieved her of incontinence, lameness, spinal pain and insomnia, restoring strength and perfect quiet to the hand and arm, patient being able easily to thread a needle. Twelve months have passed since the last sitting. There has been no relapse.

Case of Chorea, of seven years' duration, in a young lady aged nineteen. Movements moderate in character. After first suggestion there was greater quiet. Following five additional applications the patient did not improve. The treatment was then abandoned.

Chorea in a boy of twelve years, who presented constant movement of head, arms and face. He received twenty-four treatments, improved rapidly and promised recovery. The treatment ceased abruptly because patient was removed from the city.

Chorea in a boy of eight years. Twitching of eyes, brows and lips. He received fifteen applications of suggestion. To-day, unless fatigued or excited, he shows no choreic symptoms.

Chorea since Childhood in a young man aged twenty-four. A severe case. Patient a masturbator. Received twenty-four treatments with slight improvement which was not permanent.

Case of Stammering in a gentleman of thirty years. Stuttered very badly. Had sought relief at home and in Europe since childhood. A good subject, slept profoundly. He received 104 applications of suggestion. The stammering decreased steadily and remarkably. At the present time, after a lapse of three years, unless excited or embarrassed, the patient speaks smoothly and connectedly.

My experience with cases of stammering has led me to believe that the mind stammers as well as the muscles and the suggestion that, during speech, there will be an undisturbed tranquillity of mind, is one of which I always make use. In a susceptible person this will cause a less interrupted nerve discharge. In addition to this I suggest perfect repose and freedom from all spasmodic movements of the diaphragm.

The longer the affection has lasted and the more pronounced the stammering, the greater the number of applications of suggestion should be. It is needful to create another mental and another muscular habit. This requires time.

Case of Stammering in a student of Harvard University. He stammered in every sentence but not nearly so badly as did the former case. After the first suggestion patient did not stammer once during half the next day. Then the trouble returned. Following second sitting the effect was more prolonged. A few successive treatments disposed of the affection and two years later patient reports that he is still free from it.

Case of Stammering in a young lady whose speech broke every few words. After two sittings she thought herself somewhat relieved. After the ninth patient was in doubt. Received fifteen treatments in all after which she was certain of marked improvement but has never been wholly free from the annoyance.

Case of Chronic Retention of Urine in a young man from spasm of the urethra. Relieved permanently by five treatments.

The cases which I have reported sufficiently show the usefulness and occasional failure of the suggestive treatment, which, like other remedies, but in my experience less often than they do, meets with disappointment. I think, however, that I have indicated the beneficial effects of suggestion in ailments of a peculiarly unyielding nature and which I purposely selected from my record-book, in order to make clear that such forms of illness, having defied other means of relief, still have a friend in suggestion, which, while it may not always bring recovery, will, in susceptible persons, often confer the comforts of amelioration.

It is needless at this time to add other illustrations, but I will point out, that if suggestion can give alleviation or recovery to cases so obstinate in character as those I have here detailed, it becomes very evident that this means of relief offers permanent aid to ailments which are curable. This I have satisfactorily demonstrated in a list of cases which has become very long.

In closing I may also call your attention to the interesting fact, which I have proved over and over again, that, when it becomes necessary, in connection with suggestion to give specifics like iron and digitalis, they will, under suggestion, act vigorously where they formerly have failed to do so.

Clinical Department.

A CASE OF ADDISON'S DISEASE.

BY KENELM WINSLOW, M.D.,
Visiting Physician, Newton Hospital, Newton, Mass.

ON May 10, 1895, I was asked to see a man in a boarding-house who had been vomiting for a few days. He was a French Canadian teamster, age twenty-eight.

Family history negative.

Personal history as follows: Has had gonorrhea and very probably syphilis. Had not been feeling strong for some time. Stopped work only a week before on account of weakness. Anorexia for weeks, and nausea and vomiting occasionally for a few days. On careful inquiry, subsequently learned that he had been failing for five months; getting thinner and weaker.

About Christmas, 1894, the patient went to Maine to work in the woods; and on returning in March, 1895, his friends said he looked as if he had been starved to death, and had grown so much darker that they joked with him about it and doubted if he were a white man. One of them observed to the writer that even the patient's lips had grown black.

The patient complained, when first seen, of vomiting, and, as the writer was only introduced casually while visiting another patient, bismuth and cerium, with a milk and lime-water diet, were recommended and the full import of the case was not perceived.

At the second and last time the patient was seen alive, two days after the first visit, he complained of great weakness and restlessness with much nausea and vomiting but no pain. Physical examination showed patient very thin; an angular curvature of the spine in the dorsal region; face and arms half-way to shoulder almost black; ocular conjunctivæ clear and white; pigmentation in groin and elsewhere, but not very well marked; pulse barely perceptible, thready—90 per minute; temperature 99°, hands cold and clammy; tongue coated white, chest barrel-shaped; heart and lungs negative, abdomen flat, and nothing remarkable observed.

The patient was sent immediately to the Newton Hospital in an ambulance, as he had grown very weak the last few days. After spending three days in the hospital he died unexpectedly during the night.

He was fed on nutrient enemata, as vomiting was incessant. The urine was free from albumin and sugar; specific gravity 1.015.

At the autopsy the brain was examined by E. W. Hill, M.D., neurologist, and the chest and abdomen by Dr. D. L. Baker, who suggested the possibility of Addison's disease, and also by the writer. Nothing of any import was found except absence of all fat, subcutaneous or omental; cavities of body very dry and heart small. The supra-renal capsule was not demonstrable on the right, and on the left appeared to be small but normal.

Diagnosis of Addison's disease was made from the characteristic group of symptoms during life, namely: pigmentation of the skin, grave asthenia with nausea and vomiting, together with exclusion of other causes of disease or death.

Objection may be made that disease of the supra-renal capsule was not discovered, but this is not invariably present. The case is offered on account of its rarity. Osler has it 1 in 3,000 in foreign clinics and much rarer here.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

ON THE EFFECT OF GIVING LEVULOSE AND INULIN TO PATIENTS SUFFERING FROM DIABETES MELLITUS.

Dr. W. Hale White[1] says that among the eight cases of diabetes which form the basis of his paper, some were given dextrose, inulin, and cane-sugar, as well as levulose. All were, for the first few days, put upon hospital full diet, which consisted of twelve ounces of bread, one ounce of butter, half a pint milk, half a pound of potatoes, and six ounces of meat a day. Tea and sugar were given morning and evening. The amount of sugar passed on this diet was estimated. Then the patients were given a diabetic diet consisting of twenty soya bean[2] biscuits, two eggs, two almond biscuits, one fluid ounce of milk, twelve ounces of cooked meat, together with abundance of greens, water-cress, tea and soda-water. If any patients found the soya-bean biscuits dry and disagreeable, they had gluten bread instead. When a constant diabetic diet had been given for several days, levulose was added to it and the excretion of sugar was then compared with the quantity passed before the levulose was given. In six out of the eight cases the solid levulose now in the market and prepared by v. Scherring was used. A specimen of this that was analyzed was found to contain no dextrose. In the other two cases the thick syrupy form of levulose sold some time ago was given, but its approximate corresponding value in the solid form Dr. White gives in tables appended to his article. The patients were allowed to take the levulose as they liked; some took it in their tea, others drank it in solution, in water. The average number of grains given daily varied from 200 to 1,000.

Inulin, which is the starch corresponding to levulose, was given in the form of dahlia tubers. They contain about ten per cent. of it; they should be boiled for four hours until soft, and eaten as a vegetable like potatoes; they have rather a sharp but by no means disagreeable taste. They were a fashionable dish in France before the French Revolution, and at the present day are eaten in South America.

Dextrose and cane-sugar were given like the levulose.

In comparing the results obtained by this author with those of others, the writer states it should be remembered that with one exception all his patients were severely ill with diabetes and were passing large quantities of sugar. Large amounts of levulose were given; and this is important, for in a severe case of diabetes the quantity of sugar passed often varies so much from day to day that no definite results can be expected unless large quantities of levulose are administered.

In discussing the question of the relationship between the amount of levulose given and the amount of sugar excreted, the writer says it seems probable, that if the levulose is going to lead to a smaller excretion of sugar than would have resulted if all the levulose had been passed as sugar in the urine, the more that is given the better, until at last a point may perhaps be reached at which not only does the levulose lead to no increased excretion of sugar, but, acting like opium, it sometimes seems to diminish the amount of sugar excreted. Probably in these cases it has a doubly beneficial action, for in addition to having this opium-like effect it is a food.

As regards the weight of the patient one case (Case IV) confirms the conclusions derived from the examination of the urine, and goes to show that sometimes when levulose is given to diabetic patients they not only gain on the levulose given, but it appears to hinder the destructive metabolism going on in them.

From the eight cases of diabetes mellitus the writer draws the following conclusions:

(1) If large amounts of levulose are given, some of it appears in the urine.

(2) In none of these cases did levulose have the pernicious effect, often seen with ordinary carbohydrates, of increasing the output of sugar beyond the extra quantity given.

(3) When levulose is given the excretion of sugar is usually increased, but it may be diminished.

(4) In most cases much less sugar is passed in the urine after giving levulose than would have been excreted if the previous excretion of sugar had remained stationary and all the levulose had appeared in the urine.

(5) There is some evidence that the larger the amount of levulose, the less will be the increase of sugar in the urine.

(6) While, therefore, some of these cases show that levulose can be utilized better than dextrose, none of them show that dextrose can be utilized better than levulose.

(7) None of the patients felt worse for taking levulose; indeed, some felt better and gained in weight.

(8) Probably a moderate amount of dahlia tubers taken, as a vegetable, by patients suffering from diabetes would do no harm.

(9) The effect of levulose on the excretion of urea is unimportant.

(10) The amount of urine passed when levulose is given varies with the quantity of sugar passed.

LEVULOSE FOR DIABETIC PATIENTS (ITS PARTIAL CONVERSION INTO GLUCOSE).

J. B. Haycroft[3] records the results obtained in three cases of diabetes by giving levulose as a carbohydrate food. The patients were placed on a fixed diet, from which the carbohydrates were excluded as far as possible, and the sugar estimated in the urine. In alternative periods of three days 55 grammes of levulose were given per diem in six doses. The quantity of sugar excreted was determined by Fehling's solution and by polarization. From observation and experiments the author draws the following conclusions:

(1) A patient suffering from chronic diabetes can utilize 50 grammes or more of levulose daily.

(2) In some acute cases a part of the levulose taken with the food is excreted as such; a part is utilized in the body, and a part is transformed into glucose.

(3) In rabbits glycogen is formed from the levulose taken and is stored up in the liver.

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[1] Guy's Hospital Reports, vol. l.

[2] See abstract of an article, by W. Hale White, on the use of Soya Beans in diabetes mellitus in my therapeutic report of October 19, 1893. F. H. W.

[3] Medical Chronicle, 1894; original article in Zeitschrift für physiologische Chemie, Bd. xix, Heft II, 1894.

THE DANGER OF ANESTHETIZING DIABETICS.

Bayer[4] calls attention to the danger of narcotizing diabetics. He has reported three of his own cases and nine collected from medical literature. Even in slight cases of diabetes the patients became comatose and died. Coma did not develop until after the chloroform narcosis had passed off, in twenty-four to forty-eight hours. The patients then became indifferent, stupid and confused. Finally, they lost consciousness; urine and feces were passed involuntarily; and they perished in coma. This communication is important, since it shows that the administration of chloroform is dangerous even when there is a slight degree of diabetes, it being impossible to predict whether or not coma will develop.

PHYSIOLOGICAL AND THERAPEUTICAL ACTION OF CHLOROLOSE.

Ernest Chambard[5] describes the physiological action of chlorolose on frogs and on man, and then sums up the uses of the drug as follows:

(1) As a means of studying the psychical and other phenomena of the hypnotic state, chlorolose offers a promising field for further inquiry; it produces a dissociation of the highest and most differentiated functions of the organism, and enables us to study and analyze those conditions of mind and body which are intermediate between the ordinary waking state and complete lethargy.

(2) As a means of diagnosis chlorolose merits further study as under its influence latent neuroses become manifest; for example, the author relates a case in which there was probably general paralysis, but in which the ordinary symptoms were slight or absent. Under the influence of one gramme of the drug the typical mental condition and affection of speech appeared. A latent hysterical element in other cases became manifest when chlorolose had been given for its hypnotic effect.

(3) As a therapeutic agent its soothing and hypnotic properties are of great use in suitable cases. In insomnia of a purely nervous character, in states of cerebral excitement, in the insomnia and pain which form so marked a feature in the latter stages of cardiac disease, chlorolose is of the greatest value; the absence of depressing influence upon the respiratory functions and upon the heart render it especially suitable for the latter class of cases. On the other hand, it is of little use in sleeplessness due to pain or alcohol; it aggravates the motor-incoördination of ataxic patients and the tremors of Parkinson's disease. The drawbacks to its use are that it is somewhat uncertain and that the motor and somnambulistic complications, though not dangerous, are often alarming and unpleasant for the attendants of the patient.

ONE HUNDRED CASES OF DIPHTHERIA TREATED WITH BEHRING'S SERUM.

Professor Widerhofer[6] gives the ages of these one hundred cases, which varied from one year to fourteen years; the larger number being less than five years old. He states the mortality, which was 24 per cent., and then analyzes the 24 deaths very carefully. A probable prognosis was made on the day of the first injection; and the writer divides the prognosis into four classes, Nos. 1, 2, 3 and 4, the latter class of cases having an absolutely unfavorably prognosis.

Prognosis No. 1 . . .	22 cases,	mortality 3
Prognosis No. 2 . . .	36 cases,	mortality 5
Prognosis No. 3 . . .	26 cases,	mortality 6
Prognosis No. 4 . . .	16 cases,	mortality 10

In the cases which appeared to be very light the antitoxin was not used, so they do not fall into this scale. In all the cases which come under prognosis Nos. 1 or 2, the writer injected a bottle of Behring's serum No. 1, and usually repeated the injection twelve or twenty-four hours later. If the course of the disease on the next day did not appear sufficiently favorable as regarded the removal of the membrane or the quality of the pulse, a third bottle was used. In very rare cases the writer obtained or thought he obtained his end with only one injection. In those cases where the symptoms of poisoning were marked and the local condition bad, Professor Widerhofer used Behring's serum No. 2, and followed it according to circumstances with the same number or with No. 1, once or twice.

In the severest cases where the prognosis fell under Class 4, Behring's solution No. 3 was used, and, according to the needs, was followed by a second and third injection of solution No. 2, or No. 1. In very rare cases a fourth bottle of No. 1 was administered.

The writer found Koch's syringe not easily managed. When an injection was made, the syringe as well as the skin were carefully disinfected with ether, then absolute alcohol, and finally with a two-per-cent. solution of carbolic acid.

The writer sums up as follows:

(1) He thinks there is not the slightest doubt that Behring's serum influences so favorably certain groups of cases of diphtheria, and those not of the mildest forms, that his serum-therapy deserves to be called a curative method for diphtheria.

(2) Severe cases of diphtheria, even those which present the most severe symptoms of poisoning, such as were described earlier in the article, if the antitoxin has been used within the first three days of the disease, are precisely those in which the favorable and even surprising effect of the serum is best shown. The writer saw many cases of this group recover, which before serum-therapy very rarely happened. But it should be remembered that the cases spoken of were those in which the Klebs-Löffler bacillus was found alone, not associated with other organisms, especially not with streptococci.

(3) There is no doubt that Behring is perfectly right in saying that if the antitoxin is not used until after the third or fourth day of illness its effect is doubtful. Still it must not be imagined that any later use of the serum is perfectly useless.

(4) In cases where the larynx was already attacked, the writer not infrequently saw favorable results in the beginning of the stenosis or very soon after, but if the disease had spread farther into the larynx such results were only seen in individual cases. If the smaller bronchi were affected or if there was catarrhal pneumonia, no good results were seen.

(5) It follows from what has been said that Behring's serum-therapy will significantly reduce the mortality from diphtheria.

(6) The writer cannot yet say decidedly that the serum has any injurious effect on the child. The serious and frequent degeneration of the internal

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[4] Therapeutic Gazette, 1894; original article in Deutsche med. Woch., 1894.

[5] Médical Chronicle, 1894; original article in Revue de Médecine, April and July, 1894.

[6] Deutsche med. Woch., No. 2, 1895.

organs, particularly the kidneys, took place before the use of serum-therapy.

(7) Among the after-effects of diphtheria, paralysis occurs as before the use of serum; but the writer thinks it is not so severe, nor so frequent, but has not had sufficient experience to give an opinion on the matter.

(8) The local injuries arising from the injection of antitoxin were almost nothing, a little redness, urticaria, two abscesses about the place of injection that are not worth mentioning, comprises them all.

THE TREATMENT OF DELIRIUM TREMENS DURING AN ALCOHOLIC SERVICE IN BELLEVUE HOSPITAL.

Dr. Russell Bellamy,[6] during this service, had nearly 500 patients; in such cases at this hospital the highest mortality has always been in those suffering with the acute form of delirium tremens, experience having shown that if the delirium continues for any length of time, the patient usually dies; serous effusion occurring on the surface of the brain, as is shown by the autopsy. The author, believing that the best results would be obtained if the delirium could be quickly controlled and natural sleep induced, adopted an extreme hypnotic and feeding plan, rather than the popular feeding, profound hypnotic or the alcoholic stimulant. In 25 of these 500 cases the writer used trional exclusively, and the mode of treatment was as follows: Immediately on the admission of a patient a calomel purge and twenty grains of trional mixed in water, with ten minims of tincture of capsicum to hasten absorption, were administered; and if the condition would warrant, a very hot bath was given, its temperature being gradually lowered. The patient was then placed in bed in a well-ventilated room, and restrained with sheets and shackles. If the delirium showed no signs of abatement in thirty minutes, ten grains of trional were given. If this had no effect in an hour, twenty grains were added. In nearly every instance in the cases reported, sleep followed the administration of fifty grains, and the pulse and respiration were stimulated. The drug can be administered either as a mixture with water, in capsules, dry on the tongue, or by rectum.

In several cases, on account of the feeble and weak condition of the pulse, digitalis (preferably the fluid extract) was administered. Beyond trional in a limited number of cases no medication was given, except a routine tonic consisting of strychnine with a mixture of the vegetable bitters and ammoniated tincture of valerian. In no case was a marked depressing effect from trional observed. The pulse remained good, and except in Case X, where forty minims were administered hypodermically shortly before death, whiskey was not used. Possibly on account of the ethylic and methylic elements in its composition, the drug acted as a cardiac stimulant rather than, as was supposed by many, as a depressant. The writer has found that a moderately high temperature is almost a constant accompaniment of severe delirium tremens, and therefore thinks it important to note that in no case treated with trional did the temperature rise above 102°; consequently the drug certainly possesses antipyretic properties.

In all cases forced feeding, in small quantities often repeated, was followed — the diet consisting of milk, eggs and soups.

In the 25 cases treated with trional exclusively the amount administered varied from 70 to 185 grains.

Dr. Bellamy closes his article with the following summary:

(1) Delirium was controlled with greater rapidity and safety by trional than by other hypnotics.

(2) In the majority of cases a marked stimulant effect was observed, possibly on account of the methylic and ethylic elements which enter into the composition of the drug.

(3) On account of the low temperature noted in all cases, trional must possess antipyretic properties, thereby simulating its allies of the phenol group.

(4) It was always well borne by the stomach, and in one case was rapidly absorbed when administered per rectum.

(5) No unpleasant after-effects were observed, and in all cases (barring Case X, and a tuberculosis complication) recovery was speedy.

A CASE OF CHRONIC POISONING FROM THE USE OF TRIONAL.

Dr. H. Reinicke, assistant physician in the Lunatic Asylum at Osnabrück[8] states that an account of three cases of poisoning from the use of trional has been published (two of which ended fatally), and then details the following case which was treated in the Osnabrück hospital:

The patient, twenty-six years of age, suffering from acute insanity, but in good bodily condition, was given trional at intervals from October 15, 1894, to January 29, 1895, on account of great sleeplessness. During this time the patient was in bed except for two days and received the usual diet. Care was taken that there should be regular dejections and the urine was examined at certain intervals, and up to January 23d, was free from blood and albumin. One gramme of trional was given every second evening in the usual way, that is, in a hot drink half an hour before the intended effect was desired. No trional was given from December 1, to December 22, 1894, nor from January 14, to January 22, 1895. The patient received in all 40 grammes in 107 days. The last dose was given on January 29th, and there were no apparent ill effects.

On January 30th, the patient complained of headache, dizziness, loss of appetite, epigastric pain. Temperature 38.5°. No dejection. Macroscopically the urine showed no change. January 31st, the same symptoms were increased. The temperature in the evening was 39°, the color of the face was bad; the pulse rapid and weak; nausea; five very thin, almost odorless, dejections. The urine was not evacuated separately. On February 1st, with a moderate rise of temperature, there were three similar dejections; 250 c. c. of urine were passed, of acid reaction, odorless, and with much sediment. The chemical analysis of the urine showed two per cent. of albumin in the unfiltered and one-half per cent. in the filtered urine. Heller and guaiac tests were positive; the other reactions showed nothing of consequence. The examination under the microscope showed a few white and red blood-corpuscles, bladder epithelium, numerous hyaline and granulated casts and much granular detritus. The examination of the urine gave the same or similar results until February 18th, except that the daily quantity passed increased, the color became clearer and the albumin and

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[7] New York Medical Journal, 1894.

[8] Deutsche med. Woch., No. 13, 1895.

the blood less. In time the patient was out of danger, but was left in a very weak and anemic condition.

The writer concludes by saying that it remains to be seen whether time will not show that, even when trional is used with the utmost caution, there is security from ill effects and that in this respect it does not differ from the latest hypnotics.

THE ACTION OF TRIONAL.

M. Vogt[9] draws the following conclusions:

(1) Trional is preferable to sulphonal, as it acts more promptly and produces a calm sleep with a normal awakening.

(2) The dose is from fifteen to twenty-two grains dissolved in liquid as hot as possible and is taken at bedtime.

(3) The treatment should be stopped in every case at the end of five or six days. If this is done there is no fear of poisoning, and generally during this time the patient is relieved of his insomnia.

(4) It is always a good plan to diminish the acidity of the urine in order to avoid grave accidents from the destruction of the blood-corpuscles, and this is done by the administration of alkalies.

(5) The constipation which frequently follows the administration of this remedy should not be neglected, on account of the accumulation of trional through lack of elimination.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. G. MUMFORD, M.D., SECRETARY.

Regular Meeting, Monday, April 1, 1895, Dr. C. J. Blake in the chair.

Dr. Hamilton Osgood read a paper on

THE TREATMENT OF SCLEROSIS, OF VARIOUS FORMS OF PARALYSIS AND OTHER NERVOUS DERANGEMENTS, BY SUGGESTION.[1]

Dr. J. J. Putnam: I have been much interested in Dr. Osgood's paper, and am glad of an opportunity of expressing my recognition of the importance of his cases. As regards the patient with sclerosis and spastic paraplegia, to whom he first referred, I can bear witness that she had been pretty much confined to her chair and improved very considerably under treatment by suggestion, though I had not gathered from her mother's account that she had improved quite so much as appears from Dr. Osgood's account to have been the case. The anatomical diagnosis was confirmed by autopsy, and in fact the sclerosis was remarkably extensive [specimen shown]. As regards the nature of the condition in which this patient was at the time the suggestions were made, some doubt exists in my mind as to whether some other name ought not to be found for it than that of the "first stage of hypnotism." The patient herself did not realize that she was in any peculiar condition, and it may be questioned whether the strong influence of a confident physician might not have brought about the result that was obtained without any attempt at hypnotism at all, or, again, whether the hypnotism does anything more under such circumstances than impress the patient with a sense of the physician's power. As regards the possible hysterical element in the case, I hardly think we have evidence that any such was present, even in view of the increased power of walking during somnambulism. My idea is that patients with sclerosis who still have a certain number of active nerve elements often do better if they rely blindly on their instincts, and that it is partly on that account that tabetic patients who have mental symptoms rarely stagger very much.

From that point of view I should like to speak of the treatment of locomotor ataxia. I think it is very striking indeed that a disease which is recognized to be practically incurable does show a good many cases of very distinct amelioration. One case was reported some years ago by Schultze which it seems to me ought to have more recognition than it has received. The case was under treatment, mainly by Erb, for twelve years by galvanism and other methods, and during that time made rapid improvement, took long walks and lost a good part of his symptoms. He had no lancinating pains for a number of years, and finally died from some intercurrent disease. Schultze found signs of the tabetic process well marked, though not of the severest form, showing how, apart from suggestion, the patient is often capable of doing more than he realizes that he can do. I have in mind a young man who finally died with bulbar paralysis and whose symptoms through a long period of sickness, showed most extraordinary oscillations.

I should like to speak of other kinds of treatment of locomotor ataxia that I have been carrying out in the past year which have given fairly good results, namely, the treatment by modified suspension which was taken up and largely abandoned some years ago, and also that by injections of testiculine and by static electricity. I have had several cases at the hospital which have improved a good deal. One private patient has gained in gait and in the relief of pain far more than I could have anticipated. I dare say the result is produced wholly by suggestion, but it is a method of using suggestion which would recommend itself to many physicians as relatively easy of application. Perhaps, also, there is something more to these treatments than simple suggestion. Another matter in which I have been interested is the study of the temperature as affected by these treatments. I should like to know if Dr. Osgood has made observations of that kind with reference to hypnotism. During the treatments by suspension the temperature almost always changes from a few tenths to one-half a degree and almost a degree occasionally, and it generally falls, though sometimes it rises. I have lately been taking the temperature of patients who have been semi-hypnotized, and got very quiet, if not drowsy, under the use of prolonged static electricity, and there also the temperature alters quite extraordinarily. I have the records of two cases, one of exopthalmic goitre which has improved very much, and the other of chorea which also improved distinctly under this treatment. In both these cases the temperature went up four-tenths of a degree to a degree. Sometimes no electricity was given, but the patients simply lay quiet and relaxed in a reclining chair. Even then the temperature generally rose to a marked degree, though not always.

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[1] See page 32 of the Journal.

[9] American Journal of American Sciences, March, 1895; original article in Les Nouveaux Remèdes, 1894, No. 21, p. 489.

I should certainly agree with Dr. Osgood that most of us do not use as systematically as we ought the beneficial forces that come from a regulation of the influence of the mind and I think there are many ways of doing it besides that of the verbal suggestion.

Dr. Prince: I have listened with a great deal of interest to Dr. Osgood's paper. I scarcely think any one will accuse me of scepticism as to the influence of the mind on the body; but I confess I was somewhat staggered by the title of Dr. Osgood's paper, as it led me to believe that Dr. Osgood took the ground, or believed, that suggestion could affect organic processes of the nature of sclerosis. However, after hearing his paper I must confess that I am unable to see anything in the results he has reported which is at all incredible, and which may not be considered natural. As I understand the position, it is not that suggestion affects the sclerotic process, but merely that there are a certain number of functional symptoms over and above that caused by organic disease and that these may be affected by suggestion. At any rate, it seems to me that the results which Dr. Osgood has described to-night can be accounted for without the assumption that suggestion in any way affects the organic disease. I think it is pretty well recognized now by neurologists that in many organic diseases the symptoms are of far wider distribution than is the organic process. that is, that the organic process produces symptoms which have a wider distribution than would be affected by the mere anatomical portion of the body affected. Bernheim quotes a case of hemiplegia following apoplexy which he claims was cured by suggestion. It is well known that in hemorrhage into the basal ganglia of the brain, unless the hemorrhage affects the motor fibres passing down between the ganglia, the paralysis is not permanent. There is a temporary paralysis at the beginning, owing to the fact of pressure upon these fibres by the hemorrhage. Now it is a pretty well understood fact that sometimes in a case that is going to get well the symptoms persist long after they should, and that many kinds of treatment will often cause these symptoms to clear up. I think in this way we should explain some of the apparently extraordinary results that follow suggestion in organic disease. I may cite in proof what I may call a very extreme case, and one that was very amusing, which occurred in my experience at the City Hospital. There was a patient in the service of Dr. Bradford who had met with fracture of the spine from a fall, and was treated in the usual way with plaster jackets. When he was in the surgical ward he had complete paraplegia with paralysis of the bladder, etc. He recovered sufficiently to be discharged from the surgical ward and to be sent to the out-patient department, where he came under my care. The first day I examined him he was unable to stand without crutches; could stand with crutches, but suffered great pain so that it was difficult to sit down. He was doubled up in a heap, was crooked, his back was bent, and it appeared to be a case of paraplegia due to organic injury of the spinal cord. The first day I examined him the symptoms seemed to be somewhat contradictory. I was then interested in the spinal cord localization, and was trying to localize the height of the lesion in the cord. I could not quite satisfy myself regarding the condition of affairs, and after a long examination told him to come back and I would examine him again. He came back a second time, and we were unable to give him the attention we wished; but not wishing to disappoint him, I told my assistant to give him some static electricity, thinking that might amount to something. Presently I went into the next room and found him sitting on the chair and receiving these sparks; and as I looked at him an inspiration came into my mind, and I said, "Get up and walk, you are well." He looked at me incredulously. I repeated it several times in a stern way. He at first did not seem to believe I was in earnest. He gradually got off his chair, stared at me, and walked around the room, and walked faster and faster around the room. He walked over to South Boston that day. But he was not as well as he thought he was. A careful examination showed that there was a foot-drop in both feet, atrophy of the corresponding muscles, or, in other words, he had a limited organic lesion the result of paraplegia, but not of sufficient gravity to completely lay him up; but over and above this there persisted this extremely widely distributed set of symptoms. It was the mental paralysis cured by suggestion, whereas the organic disease was not affected at all. I think all neurologists will agree that the coincidence of functional symptoms — I will not say hysterical symptoms, because hysteria has a stigma about it that conveys the idea of excitability to people's minds — that it is very common to have engrafted upon symptoms due to organic disease a large number of other symptoms of purely functional nature, and in most cases might be said, I think, to be due to auto-suggestion. It is these symptoms, I think, that are cleared up in the majority of cases of these organic diseases which are affected by suggestion. This is only an explanation of the facts which Dr. Osgood has brought forward to-night. I can concur in what Dr. Putnam has said of the extraordinary results sometimes seen in the treatment of locomotor ataxia from the treatment which he has alluded to. It is sometimes extraordinary to see how the symptoms will clear up under treatment, but I think it is particularly ataxia. I cannot help thinking the mental element plays a much larger part in exaggeration of the ataxia than is usually supposed. Let a man have the idea that he cannot balance himself, and he won't make the slightest effort to control himself. Such people are often very much benefited if made to understand that they can if they choose.

Regarding the effect of suggestion in the first stage, which Dr. Putnam has spoken of, I think that is rather a practical point. I cannot help thinking too much stress is laid on the word hypnotism. Hypnotism has nothing to do with it. You might as well talk about cutting off a leg with ether. As to whether a person is in the first, second or third stage is not important. A good way sometimes is to write out on a piece of paper the idea you wish the patient to believe; the patient is requested to carry it round and read it night and day, and that will take effect. There is one way in which suggestion rather appeals to me, and that is in those cases where you wish to produce a mental effect on the patient. It appeals to me because it seems one of the most honest efforts you can use. We do not beat about the bush. We say up and down in a straightforward way we are going to use suggestion, no deception.

Dr. Putnam: Dr. Prince has alluded to the first stage of hypnotism and the matter of being honest. Those are important points. My only desire in alluding to the first stage of hypnotism is that I think it is important to understand exactly what we are doing. In regard to being honest I see very little in what Dr. Prince said. I think it is best to say as little as possible to a patient about what we are going to do unless there is some definite reason for doing so. If we say we think his nervous system will be improved and he will be better, that his symptoms will be relieved if he does as we tell him, it is as honest as if we use the word suggestion. I cannot see how that word adds anything to the case, and I think, on the other hand, it does sometimes bring in an element which is objectionable. You try to make a patient a partner in a mode of treatment which he really cannot understand.

Dr. DeBlois: I should like to mention a case which occurred a good many years ago. I saw in Dorchester, in consultation, a lady, married, who had not spoken for two years; no sound had escaped her lips. It was a case of hysterical aphonia. I had with me in my bag a galvanic battery, and while charging the battery I said to the husband, "as soon as I apply this battery she will speak, and go on speaking," because, having examined the larynx, I saw that it was in perfect order, perfect movements of phonation, only she would not allow any sound to pass through it. I applied the battery and she said: "Stop! Stop! Stop!" and she went on talking. That might have been mental suggestion, but I thought it was faradism.

Dr. Osgood: With reference to my account of the improvement in the case of sclerosis I did not wish to gild my case and did not do so, my information as to the patient's progress after she went home having been gained from her letter to me and later from her mother, whose replies to my questions I wrote down as she made them. In using the term normal that simply meant that when I last saw her at St. Margaret's in the standing or sitting position, the patient could lift her legs normally. I did not say she could walk normally, and I showed the intermittent character of her progress.

As to the sleep-walking I reported that precisely as the mother reported it to me, namely, that she saw her daughter walk to the door naturally. She added: "I went and waked her up, and it was difficult to get her back to bed." The main point which this case brings out is this: I find a young woman unable to move at all, who has not stood once in two years, she cannot lift her feet, cannot bend her legs, and under the effect of the treatment she is able to get about the house again. With reference to the first stage into which I said she passed: I do not trouble myself very much as to what stage of somnolence the patient reaches so long as he remains quiet, for I have discovered that suggestibility may exist in the first stage as distinctly as in deeper stages. And I may add that hypnotism and its stages are wholly secondary to suggestibility. The latter is the source of relief. In fact, a patient may fall asleep and yet not respond to suggestion — though this is a rare occurrence. When a patient says I have not affected him at all, at the same time while in my office he lies in my chair perfectly still for the thirty minutes I give him there, never moving, never opening his eyes, I believe there exists a certain amount of inhibition of his brain, involving the objective mind, an amount sufficient to increase that patient's suggestibility, or to bring it into activity and to keep the patient's attention. The undeniable proof of this is the improvement in the patient's condition. On one occasion a very blunt old lady came to me with chronic eczema of the scalp, hands and feet, insomnia, and very much depressed mentally. After twelve treatments as I dismissed her, she said: "I came to you with such-and-such symptoms. I am absolutely well. The eczema has disappeared. I sleep like a child and am happy. In your office I have not been asleep at all and so far as I know have been unaffected; how did you do it?" I tried to make clear to her the difference between somnolence and suggestibility. That was a case in which the patient was suggestible without being very somnolent. Another striking illustration is the case of a notoriously intemperate man, who, after receiving the suggestive treatment said to me: "I do not think I have ever been sleepy in the least, but, somehow, I have wholly lost my lifelong craving for liquor." And this man has not touched alcohol in the past three years. To me the first stage is a clear one and I have accomplished a great deal of relief in that stage. It is the stage in which a man finds himself in the morning when he says: "I must get up; it is time to get up," but does not, is not able to move. It is inhibition, which of course has not gone very far. When I emphasized the fact that the young woman with sclerosis was so hopeful as to expect recovery, it was to show the difference between the mental depression in which I found her and the state of mind in which she was when she last wrote to me.

In regard to honesty: I was invited to speak upon the subject to the Essex County District Society two years ago and afterwards to come again and answer questions. One gentleman said: "The thing I do not like in this treatment is that it seems to me it is not honest. You treat cases you do not expect to recover." I asked him whether he did not treat cases which seemed to him beyond help and yet which sometimes recovered. "Yes." "Did you never give a patient a prescription and assure him it would help him and find it failed?" "Yes." "Was that dishonest? When I tell the patient that certain symptoms are going to be relieved by suggestion, my former experience leads me to believe they will be relieved, and I feel I have a right to make that assertion."

With reference to the temperature of patients. There was a time some years ago when simply out of curiosity I tried to make observations, but it did not seem to me of any importance. I observed a slight change and nothing more, but if a patient went into a profound sleep and remained thus thirty minutes I should expect physiologically, that the temperature would fall.

Dr. A. K. Stone read a paper on

PROSTITUTION: THE RELATION OF THE EXPERIENCE OF EUROPE TO THE SOLUTION OF THE PROBLEM IN BOSTON.[1]

Dr. DeBlois: I won't commence with the examinations in Boston; I will go a little further back to the government service, and will give you a few notes of things I remember at that time. In the various departments of the naval academy where 300 to 400 young men from eighteen to twenty-two, were kept within walls during eight months of the year and then taken off on a cruise and occasionally turned loose on the shore, it is not to be wondered at that they were like the bull kept ready for the bull-fight in the arena, that they rushed madly to their own destruction. I remember one foreign cruise in which most of these young men were turned loose in Paris and went to one of the proverbial houses (a show-house). These were not entirely show-houses, for I met afterwards a French nobleman who had lived in Paris a great deal, and he told me these houses were great resorts with the French themselves; they go and stay there several days. The examination of these houses was very carefully made. The women were very careful themselves. They always examined their company, and knew enough to make a gross examination. From Paris we went to Portsmouth, and though there are licensed women in England, there are no houses as we understand them in this country and in France and on the Continent. The women were loose and rambled about. There was a great deal more venereal disease in Portsmouth, England, than in Paris. In Paris we had very few cases. Afterwards in Spain and Portugal, Lisbon, Cadiz where there were government houses to which the most went. There were 250 to 300 men on the ship; and in Lisbon there are well-regulated government houses where inspection is carefully made, and the amount of venereal disease contracted was very small indeed. I have been on ships in other parts of the world, the West Indies particularly, and some in South America; and there venereal disease was very frequent. There was neither licensing nor examination.

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[1] See page 29 of the Journal.

I was led to look a little into venereal disease in Boston from the amount that I saw because I was obliged to take syphilis to keep my throat cases, and I have had to do with it in young students in Harvard and Technology, and last year I had three cases of disease transmitted from lip to lip. Twice since I have been in Boston I have made examinations in houses — once, a long time ago, in not a very high priced house where there was much less disease than I found later. Last year I was asked to make regular examinations of one of the best houses in Boston, and I did during last year carry out the thing faithfully as far as I was able. There were no microscopic examinations made. Had there been I do not suppose a woman in the house would have been allowed to continue. I think Dr. E. W. Cushing has pretty well demonstrated the fact that the gonococcus lives forever in the tubes and ovaries of a woman of that kind when once afflicted. That house was closed during the advent of reform, and it worked so effectually that I was never able to get my instruments out of the house. In this case I made examinations three times a month, and examined from five to nine women. I insisted that the women should be examined before they dressed. At my first visit I threw out two out of seven with secondary syphilitic throats. The examination consisted of the skin, throat and nose, and the genitals with the speculum always. I found several cases of primary trouble, and I believe that those women were thrown out of employment for a short time; I do not know how long. I never knew of but one case of disease having been contracted while I made the examinations there. There was one woman who persistently refused to be examined, and I know she imparted disease to a young man across the river. The greatest difficulty in these cases is the unwillingness of the women themselves to be examined. Under all kinds of excuses they avoided it. The amount of menstruation these women had, according to their own accounts, was fabulous. They would menstruate three times a month if you would credit it. They had to be driven from the beds to the bath-room and from the bath-room to the room where I made the examination. They came in before they were dressed, so that I could make as careful an examination as I knew how for evidences of syphilis on the skin. I think if I had had any other authority behind me except the word of the woman who kept the house I might have done more good than I did. I feel sure that I saved a great many young men from disease, because I know I threw out several cases of gonorrhea which would have been passed round. I do not discuss the ethics of the case any more than Dr. Stone does. This is a thing that has existed from the beginning of the world, and has got to exist. Young men are growing up; and it is in their youth they are reckless and contract disease which goes with them through life. Many of them never get over it, because they will not take proper treatment. It seems to me there should be some place where these women can be taken care of.

Dr. Forster: I saw in the paper this morning that there was a bill reported to the legislature making it mandatory on every city of 50,000 to have a hospital that would take venereal disease. A friend of mine, one of the senators, has made a special effort to have that rule which prohibits venereal disease from hospitals abrogated. I think he is about to accomplish his purpose. My own experience in treating venereal diseases leads me to think that most of the cases are not contracted inside houses of prostitution. I am very glad to see that the people are waking up to the fact that such cases should be admitted to hospitals.

Dr. Folsom: I think a great deal can be learned from the experience of England with reference to regulating these diseases in the army. In the first place, it shows that in an inquiry of this kind it is impossible to get at the facts. In the second place, it shows, in my opinion, that no examination of prostitutes which is practicable will materially control the amount of venereal disease that prevails in the community. And, in the third place, it shows that laws licensing prostitutes or regulating prostitution cannot be maintained in any English-speaking country, and that they cannot be passed in any English-speaking country where people know what they are doing. I suppose the gentlemen all know that the laws controlling syphilis and gonorrhea in England applied only to certain garrison towns in England, Ireland and India; and in certain cases of some of the larger towns, only to that portion of the town where the soldiers were quartered. The gentlemen who were very anxious to have this bill passed knew perfectly well that no such laws could be passed unless under some name which did not betray their significance, and so they were called the Contagious Diseases Acts. They were passed; and I do not remember how many years they were in existence, but long enough to have had quite a number of parliamentary inquiries and an immense deal of literature on the subject published by the government, beside a great deal by the adherents of the law and those opposed to it. The statistics were interpreted in diametrically opposite ways by the two parties. The facts in regard to the case were, so far as I could learn, that the amount of gonorrhea in the army was considerably reduced, about one-fourth I think, but the amount of syphilis not very much. The opponents of the laws used the same statistics in such a way as to show that this was not the result, if one considered the whole population and not the army alone, but that the laws actually made matters worse. After reading quite a number of parliamentary and other reports it is difficult to satisfy one's self how much reduction there was.

With regard to the effect on the women themselves, the facts probably were, I think, that there was very much less marked evidence of disease than in other places, but of course the evidence of gonorrhea cannot always be seen by the naked eye and women may be in a state to infect and nothing be seen by ocular examination, and it would be impossible in every case to have microscopical examination.

In regard to chancres, everybody knows that they are often very difficult or impossible to find; and moreover, women within a few days or hours after examination may manifest signs of syphilis. The opponents of the laws stated that the effect of these examinations was to drive the infected women away from the garrison towns into the population in general, and they also maintained, and in some cases their evidence was without contradiction, that virtuous and innocent women had been taken by police and examined who not only had not had venereal disease, but were absolutely virgins. The evidence was so contradictory and the moral offence of the laws was so great that just as soon as the community in general found out the real purport of the laws they were repealed by act of parliament.

With regard to the hospitals for syphilis and gonorrhea, the experience of England is interesting in that respect. Throughout the kingdom, some thirty-five years ago, more or less, quite a number of hospitals were established, called from Mr. Locke their originator, Locke hospitals. The general impression in many parts of England and in this country was that they were hospitals where prostitutes were detained under lock and key until cured. I find that the universal experience was that their influence in reducing the amount of venereal disease in the community was nothing. There was no law which could be passed by the English parliament which would make it possible to detain these women there beyond the length of time they were willing to stay. They came in in their helpless condition and as soon as well enough to be about went out, and just as much in a condition to infect men as before and in some cases more so. It is alleged that a few were reformed.

It is a difficult problem. I suppose the gentlemen know that St. Louis is the only place in this country where an attempt has been made to regulate these diseases by licensing and inspection, and there the city ordinance was very short-lived.

Dr. C. P. Putnam: As many of the gentlemen may know, at the Almshouse Hospital at Tewksbury and at the Long Island Hospital a great many syphilitic patients are cared for. There is a statute allowing the keeper of almshouses to detain patients as long as the disease is in an active condition.

Of course the number is not great as compared with all needing the treatment, but a still greater number might be induced to go to these hospitals.

Dr. Folsom: I dare say Dr. Putnam will remember that the law of which he speaks is a revival of what used to be called the Omnibus Act, passed a number of years ago. It worked quite well in detaining a few women with venereal disease. It gave the State Board of Charities the power to retain vagrants and all sorts of disorderly persons. It did not mention prostitutes or people with venereal diseases, but prostitutes were retained under that law and women with syphilitic disease were retained until thought to be pretty well. It was necessary for somebody to appear at the State House almost every year to prevent the repeal of the law. But finally the law was repealed. But, as Dr. Putnam says, it has been revived in a different form now, and a few women are kept at Tewksbury and Bridgewater, but I do not fancy the number is sufficient to make any material difference in the amount of venereal disease in the State.

Dr. Stone: I did not know that I stated that the houses in Boston were better than those on the other side, only no worse and it must be remembered that the Europeans furnish about sixty per cent. of the diseased inmates. The amount of disease in one of the best houses in Boston as seen by Dr. DeBlois would bear out my statement.

In regard to the Contagious Acts, I did not consider them for many of the reasons the gentlemen have spoken of. It was an Act entirely confined to the garrison towns, many of which were almost small villages having nothing but the houses in which the prostitutes lived and a few stores which were required to run the people who took care of the army, and so in many ways it did not seem to enter into this discussion. Some of the arguments used at the present time are about the same as used then. It was brought out at one of the hearings that the women called themselves the Queen's women as the soldiers were the Queen's men. One argument used by those opposed to the law was the danger of the spread of the disease by the use of the dirty speculum. That argument has disappeared under the beneficent reign of aseptic surgery. An argument used by those in favor of the Contagious Acts was that it was no expense to the taxpayer, that the expense was all to be paid by women. This argument has been turned round and those in favor of the extension of more severe measures in the Continental cities are having it distinctly understood that they advocate doing away with the payment of the money by the women themselves and having it done at the expense of the government.

What I meant by waiting a decade was that these new methods backed perhaps by some of the bacteriological work that is being done might possibly have a certain amount of effect, and at the end of that time something more definite could be stated in regard to what position we could take before the country. But during the time that is to be we have got, as has been said, to maintain public sentiment and do what we can for these unfortunates. It seems as though the time was ripe for doing away with the regulations in regard to our hospitals.

I am told by those who have charge of some of the societies that a great change has come over the people. Twenty or thirty years ago a woman who had made a misstep in a sexual way was practically damned, no house open to her and no way to reform. At the present time, they said if they could have gotten hold of the 5,000 women supposed to have been turned out of the houses in the last eighteen months they could have furnished places in families for every one of those women without any trouble, showing the change of sentiment among a certain class of the people in their willingness to try and help such women. I do not mean to say the women would have wanted to go.

The possibility of making a satisfactory examination is pretty hard. I have tried at my hospital clinic, seeing a good many women with suspicious secretions, to demonstrate the gonococcus and in a very large number of cases where I was perfectly certain that the secretion from the urethra was gonorrheal and a perfectly straight case I have been unable to prove it with the ordinary bacteriological examination. Further I know that some writers in Germany have entirely given up searching in the vaginal and cervical secretions of women for the gonococcus on account of the great difficulty of demonstrating it.

It seems to me under the circumstances that we must do what we can to repress the evil to as small a compass as possible and we can do that best by keeping the women separate rather than allowing them to be housed together. If the people at large know that certain houses are tolerated, are not liable to be raided, and that they can go there in peace and quiet, they will go there often when they have no strong desire of seeking relief, simply for the sake of the good time, having "a circus." A large number of those I see say they got their disease at a time when they had not really any desire, but were perhaps going away on a trip and thought they would go to see a woman just before they went away in case they might feel desire later on. The amount a man does is largely due to the opportunities offered and if the evil is kept in the smallest possible compass then we shall have the least likelihood of extensive spread of the disease.

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AMERICAN SURGICAL ASSOCIATION.

NEW YORK, MAY 28, 29 AND 30, 1895.

The first meeting, Tuesday morning, began with a

DISCUSSION ON THE OPERATION FOR THE RADICAL CURE OF HERNIA,

which was opened by **Dr. John H. Packard**, of Philadelphia, who seemed to differ considerably from many other surgeons as to the course which is pursued by an inguinal hernia. In support of his theory he made a number of diagrams, stating that the majority of these hernias do not come down under the infundibuliform fascia, as has often been stated. To prove this, he gave the results of over twenty dissections which he had made within the past two weeks on elderly subjects. He said that if the inguinal hernia comes down and pushes its way into the scrotum, we would find a very large variety of what are known as "infantile hernias." He made on the blackboard a diagram of hernia as given in several of the older anatomies, showing distinctly the sac laid open, with a portion of it dissected away, and the testes and duct lying in a separate envelope. The speaker said that he simply ventured the statement that the existing theories as to the course pursued by an oblique inguinal hernia were incorrect, in the hope that some of the members of the Association would make dissections to convince themselves whether or not he was right in his opinion. He spoke briefly of his method of performing the operation, and stated that in two recent operations, one on a man fifty-four years of age, and another on a girl thirteen years old, the hernias had not descended since the operation, even when there was violent coughing, although before the operations the hernias had descended.

Dr. Charles McBurney, of New York, confined his remarks entirely to inguinal hernia, as he considered that sufficiently illustrative of the subject. He differed somewhat from Dr. Packard. He called attention to the extraordinary rapidity with which operative surgery of hernia had developed within the last eight or nine years. He said that, contrary to Dr. Packard, he considered the presence of the cord and of the transversalis fascia about the entrance of the canal of the utmost importance in speaking of the anatomy of inguinal hernia. He thought that, the sac having been removed, the next problem was to prevent its re-formation, and stated that Dr. Halsted, of Baltimore, had solved that problem. Although Dr. Halsted's operation is still advisable in many cases, in other instances it has been superceded by later devices. He spoke briefly of the operation which goes under his own name, and said that this was first suggested at a time when there was the gravest necessity for a substitute very different from that then in vogue. He thought the recurrences after his operation had been about thirty per cent., and he certainly would not advise any operation at the present day which gave such a percentage of recurrences. He considered the operations of Bassini and Halsted of great value, and he thought Dr. Halsted's the most perfect operation now in existence for the treatment of inguinal hernia.

Dr. John E. Owens, of Chicago, said he had nothing original to suggest, but did not entirely agree with Dr. McBurney regarding the importance of removing the sac, thinking it better to retain it and fold it up into a plug. He considered Dr. Halsted's operation a very good one. He referred to the length of time that a patient should be kept in bed after an operation, and mentioned an instance of one of his patients going home on the eighth day, but being compelled to take to his bed immediately therefor.

Dr. Halsted, at the request of the President, made a few remarks. He said that theretofore he had refused to either write or talk any further about the subject of hernia. He would caution surgeons against making too indiscriminate excision of the veins in the operation which bore his name. He said there had been 180 cases of his operation, in three of which there had been recurrence, and in all of which, where the veins were enlarged (about 75 per cent. of the cases), they were removed. The reason for great care in excising veins is that in many instances loss of the testicle followed; but he was sure that it was better to take one chance in fifty or sixty of losing a testicle, than one in four or five of having the operation done over again, where excision of the veins was deemed essential in order to prevent recurrence. He considered the opening of the sac, for many reasons, was very necessary. As to the time patients should be kept in bed, he did not think three weeks too long.

The next paper was entitled the

RESULT OF TREATMENT OF HYPERTROPHY OF THE PROSTATE,

and was read by **Dr. J. W. White**, of Philadelphia.

As to the causation, he referred to Sinot's theory that prostatic hypertrophy was the natural hypertrophy of age, whereas others claim it is the result of various causes, among these being excessive sexual intercourse. The changes which are caused in the male by the change in the testicles correspond to the changes in the female due to the change in the ovaries. The testicles secrete spermatic fluid for some considerable time after spermatozoa cease to exist in it, and after the loss of reproductive powers. He claimed that the removal of the testicle in these cases had the same effect upon the prostate as if the reproductive functions still existed. He stated that the functions of the testicles were dual: in the first place, that of the reproduction of the species; and, in the second place, to impart masculinity to the individual. The reader had collected 111 cases of double castration for prostatic hypertrophy; and, to show the genuineness of these cases, and that the conclusions arrived at could be relied upon, he related the history of each of them in detail. All the cases were of the worst possible nature, and had been treated by leading surgeons. The reader thought it necessary to refer to these cases at such length in order to prove that they were sufficiently reliable for the operation to be no longer regarded as experimental. Alluding to the 111 cases quoted by him, he said that one had been considered entirely hopeless previous to the operation, and yet he received great benefit from it, even if perfect cure was not effected. Out of the 111 cases there were 20 deaths, and it was shown that several of these were due to existing complicated conditions.

Dr. White summarized as follows:

(1) The function of the testes, like that of the ovaries, is twofold; the reproduction of the species, and the development and preservation of the secondary sexual characteristics of the individual. The need for the exercise of the latter function ceases when full adult life is reached; but it is possible that the activity of the testes and ovaries in this respect does not disappear coincidently, and that hypertrophies in closely allied organs, like the prostate and the uterus, are the result of this misdirected energy. This hypothesis would increase the analogy between the fibro-myomata of the uterus, and the adeno-fibromata of the prostate, which, from a clinical standpoint, is already very striking, and is further strengthened by the almost identical results of castration in the two conditions.

(2) The theoretical objections which have been urged against the operation of double castration have been fully investigated by clinical experience, which shows that in a very large proportion of cases (thus far approximately 82.2 per cent.) rapid atrophy of the prostatic enlargement follows the operation, and a disappearance or great lessening in degree of long-standing cystitis (52 per cent.), more or less alteration of vesical contractility (66 per cent.), amelioration of the most troublesome symptoms (83 per cent.), and the return of local conditions not very far removed from normal (46.4 per cent.) may be expected in a considerable number of cases.

(3) The deaths have been 20 in 111 cases, a percentage of 18; but of these there seemed to be 13 that may fairly be excluded in an attempt to ascertain the legitimate mortality in patients operated upon under surgically favorable conditions; that is, before the actual onset of uremia, or, better, before the kidney had become disorganized by the two factors, rarely absent in advanced cases — backward pressure and invasion. This, then, would leave a mortality of 7.1 per cent., which would probably be decreased as advancing knowledge permits of a better selection of cases. It is important to know that even in the desperate cases (15), 75 per cent. showed improvement of symptoms, or shrinkage of the prostate, before they died.

(4) A comparison with other operative procedures seemed to justify the statements that, apart from the sentimental objections of aged persons on the one hand, and the real, entirely natural and very strong repugnance to the operation felt by younger persons, castration offers a better prospect of permanent return of normal sexual conditions, than does any other method of treatment. The relatively greater degree of improvement in successful cases should be considered, as well as the mortality, in comparing the operation with the various forms of prostatectomy and prostatotomy. So, too, should the absence of any risk of permanent fistulæ, peritoneal or suprapubic, and the ease and quickness with which the operation may be done.

(5) The evidence as to unilateral castration is at present contradictory, but there can be no doubt that in some cases it is followed by unilateral atrophy of the prostate, and in two cases at least this has resulted in a very marked improvement of symptoms. It is worthy of further investigation.

(6) My experiments on dogs have shown in nearly every case in which the vas deferens was tied and divided on both sides, that without much change in the testicles there was beginning atrophy and considerable loss of weight in the prostate. These experiments need repetition and confirmation, as the absence of corresponding testicular change seems to make the results somewhat anomalous. It is possible that the occlusion or severance of small but important nerves may account for the effect on the prostate.

(7) Ligation of the vascular constituents of the cord, or of the whole cord, produces atrophy of the prostate, but in my experiments only after first causing disorganization of the testes.

CLINIC AT THE BELLEVUE HOSPITAL.

Dr. Lewis A. Sayre presented the patient on whom was performed the first successful excision for hip-joint disease which was ever done. He briefly reviewed the history of this operation up to the present time, and showed three other cases which were operated upon many years ago, in each of which the result was most gratifying, complete motion of the joint being secured with but very little, if any, shortening.

Dr. Phelps showed several cases of fracture of the patella, and stated that he had operated upon over 100 cases, only two of which had given him any trouble, the results in every other case having been very good. In some cases perfect motion had been obtained at the end of the sixth week.

Dr. FrüHrer showed a large number of instruments which he had devised, the uses of which he explained at considerable length. Among other instruments shown were several varieties of sounds, drills, probes and other appliances used in genito-urinary surgery.

Dr. Alexander exhibited a couple of cases which illustrated his method of performing prostatectomy. The first case on which he operated was in 1894, and the advantage he claimed for his method was the very small amount of hemorrhage resulting.

Dr. Markoe presented several cases of removal of the spleen. In each instance the patient improved very much, one having gained thirty-one pounds.

Dr. Woolsey stated that he had taken a stone from the esophagus of a patient, whom he presented, and that he had operated in a like manner on 28 cases, all of whom had made a good recovery.

Dr. Meyer gave the case of a little girl from whom a portion of the upper jaw had been removed for malignant disease. The deformity was almost nil and only a very slight scar remained.

Dr. F. S. Dennis showed several cases, including two upon whom he had operated for sarcoma, one for removal of cancer of the breast, one resection of the hip-joint, and one for ankle-joint disease, in which the lower end of the fibula was removed. In all these cases the results were most excellent.

CLINIC AT THE PRESBYTERIAN HOSPITAL.

Dr. Briddon presented three cases, one of which was a man suffering from large and extensive infiltration of the glands of the groin on both sides. The second was an Irishman with a tumor on the sternal end of the clavicle and a lump in the stomach, which was thought to be carcimona. The third was of a little girl with a very pronounced carcimona. In the first a successful operation was performed, but in the others nothing of an operative nature had yet been done.

Dr. Pilcher showed a very interesting case of anterior meningo-encephalitis in a child one year old. upon whom he had performed two operations, each time removing large protrusions in front of the nasal bones. Primary union was secured, and the child bore the operations very well. The speaker called attention to the great rarity of cases of this character.

He also referred to some extent to the treatment of fractures of the lower extremities and to the possibility of so applying plaster bandages in cases of fracture below the knee that the weight of the body should be received upon the parts above the point of fracture, the fracture remaining suspended below. He offered to view several cases in which this method had been employed, in each of which the result was very favorable.

Dr. J. S. Wight, of Brooklyn, exhibited three cases of cancer, all of which were of a very serious nature, and in each of which upon operation good results were obtained. He further showed a case of broken thigh-bone, in a patient whose legs were bent directly backward. After repairing the broken thigh-bone, the legs were straightened by removing four and a half inches of bone from each one, and the patient has been able to walk about quite well ever since.

Dr. McCosh offered several patients, one upon whom he had recently performed thyroidectomy for exophthalmic goitre, with good effects; another from whom one very large and several small stones in the common bile-duct were removed with excellent results; a third, upon whom operation had been performed seven days previously for a congenital hernia of the Fallopian tubes and ovary, the patient so far having done well; a fourth, a neoplasm or carcinoma of the cecum, which was incised, the great peculiarity about the case being the extreme age of the patient; and a fifth, in whom the diagnosis of possible abscess of the brain was made, which was found upon operation to be the case, and eight ounces of pus were removed.

(To be continued.)

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JULY 11, 1895.

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THE LAST SICKNESS OF NAPOLEON BONAPARTE.

The intense interest which still centres around the first Napoleon is manifested in the numerous publications concerning him which are constantly emanating from the French press, and magazine articles appearing in this country.

A volume has lately been issued containing the hitherto unpublished reports of the Marquis de Montchenu,[1] who was for a long time in an official capacity on the island of St. Helena during the captivity of Napoleon. This book, while comparatively barren of new facts and of little worth as compared with the earlier memoirs of O'Meara and Las-Casas, contains interesting details respecting the last sickness and death of Bonaparte.

The autopsy revealed carcinoma of the stomach. The report was signed by Antommarchi, Napoleon's last physician, and several regimental physicians and surgeons. Very extensive cancerous disease was found — it was what French pathologists would call *cancer en nappe;* while the carcinomatous thickening and ulceration were most conspicuous at the pylorus. Strong adhesions bound the scirrhous pylorus to the left lobe of the liver. An inch above the pylorus, there was a large perforating ulcer. There were considerable morbid changes in the lungs and pleura, of recent date. There was fatty accumulation about the heart, and the muscular walls seemed paler than natural. There was an excess of adipose tissue everywhere; a layer of fat an inch and a half thick covered the abdomen. The liver and other abdominal organs were healthy.

The symptoms of the disease were obscure from the first, nor does it appear that any accurate diagnosis was ever formulated by the physicians in attendance. There is no evidence that any special examination was ever made over the region of the stomach for a tumor, or that any localized hardness was ever detected.

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[1] La Captivité de Sainte Hélène, Paris, 1894.

Certain of Napoleon's symptoms were misleading, and he proved himself from the first a very wilful and unmanageable patient. Among the first of the morbid manifestations was a painful swelling of the lower extremities (an edema?), a sponginess of the gums which often bled, frequent micturition and a distressing insomnia, etc. These symptoms were attributed by Antommarchi to the too sedentary life lead by the emperor, who would sulk in the house day after day because he could not take his rides without being watched by a British officer. He had a chronic hostility to the governor and frequent altercations with members of his suite. His principal amusement seemed to be in finding fault and in execration. In short, Napoleon proved himself a very poor philosopher, and did not well adapt himself to the conditions of exile on a lone and barren island.

It is difficult to account for the edema of the lower extremities from which he so much suffered, unless we assume it to have been of neuropathic origin (enfeeblement of the vascular tonus). Such a form is admitted by pathologists. Montchenu says that this swelling was accompanied by a complete moral and physical inertia. The emperor would often remain for days in a stupor.

In the record of the autopsy, it is said that the kidneys and liver were sound. The autopsy, however, must have been a superficial and hasty one, and only a naked-eye observation of the organs was made; of course, at that date (May, 1821) a considerable amount of really coarse lesion in an important organ, like the kidney, might readily have escaped detection by the ordinary pathologist.

There was enough, certainly, in the environments of the emperor at this time to depress vitality and favor the development of any hereditary diathesis. It is known, too, that cancer of the stomach was hereditary in the Bonaparte family. Napoleon, in fact, correctly indicated the nature of his own malady a few days before his death: "The vomitings which succeed each other almost without interruption impress me with the belief that the stomach is of all my organs the most diseased, and that it is affected with the lesion which sent my father to his grave, namely, scirrhus of the pylorus."[2]

Among the earliest of the hypotheses respecting Bonaparte's malady, and one that lead to much bad treatment, was that he had obstruction of the liver. "His nerves," says Montchenu, "suffered from the mercury he took, and his teeth were loosened. His hair fell out. There was toward the last much agonizing pain in the epigastric region and in the right side; and finally the nausea and vomiting were constant and uncontrollable; almost all ingesta were immediately returned, and the vomited matters contained much coffee-ground material. The symptoms pointing especially to the stomach were not very marked till at a somewhat late date of the five years' exile, and there were frequent deceptive lulls and remissions in the sickness, but with the supervention of the vomitings he went down rapidly."

Doubtless there was much needless officiousness on the part of the physicians of the staff who felt the responsibility of their charge, and were anxious to do something; certainly an amount of medicine was given which was not warranted in an incurable affection. Dr. Oliver Wendell Holmes alludes to this in a dissertation written in 1836, or only fifteen years after the death of the exiled emperor.[3] Holmes's observations are certainly confirmed by de Montchenu.

"The importance of ascertaining the existence of organic disease of the stomach is rather in preventing us from employing remedies under mistaken ideas of some disease which requires active treatment than because it offers any peculiar indications. No better illustration of the wild empiricism with which an incurable disease may be treated can be found than the treatment of the prisoner at St. Helena. Half the resources of the materia medica were promiscuously applied to his irritated organs, comprehending different forms of tonics, anodynes, stimulants, purgatives, emetic preparations, anti-emetics, and antacids! Well might he exclaim: 'Laissez-moi avec vos médecines! Je vous ai dejà dit cent fois qu'elles ne me valent rien; je connais mieux que vous ma maladie et mon temperament.'"

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THE TREATMENT OF EXOPHTHALMIC GOITRE BY THE ADMINISTRATION OF THYMUS GLAND.

AN account of three cases of exophthalmic goitre treated by the administration of fresh thymus gland is given by Cunningham in the *Medical Record* of June 15, 1895.

In the first of these cases the treatment by thyroid tablets was first tried, but was unsuccessful, the patient growing rather worse under the treatment, which was carried out, however, for only two days. The raw thymus gland from lambs fed on milk was then tried, but found to cause nausea, so that it had to be slightly broiled. Five months of this treatment resulted in an apparently complete recovery.

In the second case in which the symptoms, as in the first, were well marked, the treatment with thymus irregularly carried out for two weeks resulted in marked improvement.

In the third case thymus-gland tabloids (five grains) at the rate of twelve to fifteen a day were administered, with the result that within one week a marked diminution in the size of the thyroid gland occurred, and in two and a half weeks the pulse had fallen from 124 to 96, and the patient's general condition was much improved.

These cases, as the writer remarks, taken in connection with the case reported by Owen in the *British Medical Journal* of February 16, 1895, of exophthalmic goitre successfully treated by the accidental administration of the thymus gland, tend to show that in certain cases, at least, of exophthalmic goitre a diet of thymus may be followed by surprising and gratifying results.

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[2] Montchenu, loc. cit.

[3] Practical Medicine, vol. vii, (published by order of the Massachusetts Medical Society), p. 283.

Whether it is the nuclein of the thymus gland, or the derivative base, adenine, shown by Schindler to exist in the thymus of the calf, which acts in exophthalmic goitre in a manner analogous to that of the nucleo-albumin of the thyroid body when the latter is given in myxedema, cannot be positively stated.

The results of the experimental study of the effects of the removal of the thymus from young animals have so far been unsatisfactory.

Macalister, in 1893, called attention to the remarkable metabolic effects which occurred during a diet of thymus in a case of pseudo-hypertrophic muscular paralysis, and his results tend to substantiate the idea of some of the older writers that the thymus stands in relationship with the state of development of the muscular system. Certain symptoms of exophthalmic goitre, which are manifested by the muscular system, have led to the belief that in this disease a specific muscle-poison is secreted by the pathologically-altered thyroid which alters the normal muscle tonus into a series of small contractions. These facts have led Owen to suggest that the thymus adds to this blood some substance which opposes the action of this muscle-poison.

That a certain functional relationship, at present unknown, exists between the ductless glands is obvious from both experimental and clinical observation. Hypertrophy of the thyroid is known to follow extirpation of the spleen. Cadéac affirms that enlargement of the thyroid follows thyroidectomy in lambs, and Rogowitsch has found hypertrophy of the pituitary body after thyroidectomy in rabbits. "Clinically, Boyce and Beadles emphasize the frequency of the same occurrence in myxedema, sporadic cretinism and cachexia thyreopriva in man. In acromegaly, hypertrophy not only of the hypophysis, and either hypertrophy or atrophy of the thyroid occur, but an hypertrophy or a 'revival' (Marie) of the thymus has often been reported. In myxedema, and especially in exophthalmic goitre, a similar hypertrophy or revival of the thymus is frequently found, as is evident from the cases of the latter disease reported by Johnston, Hale White, Mosler, Spencer, Marie, Moebius, Lasvenes, Reymond and several other observers."

It is conceded by many eminent observers that the increased secretion of the thyroid is not the sole cause of all the symptoms of exophthalmic goitre, and the observations above quoted by the writer point to the possibility, at least, of changes in the action or secretion of certain of the other ductless glands being a causal factor.

The fact that in certain of the cases of exophthalmic goitre treated by extirpation of the thyroid a temporary moderation in the symptoms occurs, followed later by an increase of some of the former symptoms, tends strongly to confirm this opinion.

The case reported by Béclére in which the symptoms of exophthalmic goitre ensued in a myxedematous patient who had taken ninety-two grammes of thyroid extract in eleven hours, is also suggestive in this connection.

On the other hand, the treatment of exophthalmic goitre by thyroid extract has in some cases resulted in improvement, the improvement, according to Kocher, being due to the thyreoidin producing a retrograde metamorphosis of the hypertrophied thyroid. Cunningham would explain this fact by the theory that the "thyreoidin" causes some of the symptoms to disappear in some cases, while others are only moderated and in certain cases unaffected or even increased. He is led, by a comparative study of the above evidence and of the symptoms of exophthalmic goitre, myxedema, acromegaly and their combinations, to the conclusion that alteration in the function of one or more of the ductless glands may play a more or less prominent part in some of their symptoms. Whether the alteration of these glands is itself secondary to a primary derangement of the nervous system, or to a toxic-blood state of thyroid or gastro-intestinal origin, can only be determined by careful clinical and experimental study of these glands and their functions.

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MEDICAL NOTES.

HERING SUCCEEDS LUDWIG. — Professor Hering has been called from Prague to succeed the late Prof. Carl Ludwig in the chair of Physiology at Leipsic.

A FATAL OVERDOSE OF CHLORAL. — A case of death from an overdose of chloral has recently occurred in Berlin. The physician who wrote the prescription had failed to write explicit directions, but had depended upon verbal directions to the patient, which were not carefully observed. The physician was sentenced by a local court to one month in prison for criminal carelessness. The case should be a warning to physicians to give explicit directions in writing, since only a duplicate of a written prescription will protect the physician in case of suit.

DEATH OF A DISTINGUISHED WOMAN. — The heaviest woman in America died at Millersburg, O., on July 1st. Her weight, according to the *Medical Record*, was 675 pounds.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the two weeks ending at noon, July 10, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 128, scarlet fever 45, measles 121, typhoid fever 18.

A STEP IN ADVANCE. — By vote of the Trustees it has been decided to raise the standard of admission to the Dartmouth Medical College.

COMMENCEMENT AT THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF VERMONT. — The commencement exercises of the medical department of the University of Vermont were held at Burlington on July 8th. The degree of M.D. was conferred on 45 candidates.

The Maine Medical Registration Board.— The Maine Medical Registration Board was organized on July 9th by the election of Dr. Sumner Laughton as Chairman, and Dr. A. K. P. Meserve, of Portland, Secretary. The first regular meeting of the board will be held in Augusta on the first Tuesday in August.

NEW YORK.

Death of Dr. Aronson.— Dr. Alexander I. Aronson, a well-known physician of the east side, died suddenly of apoplexy on June 24th, at the age of thirty-seven years. He was a native of Germany and was graduated at the University of Jena in 1879. He came to New York to practise in 1881.

The Staff of the Harlem Hospital.— The Commissioners of Charities and Correction have partially completed the reorganization of the Medical Board of Harlem Hospital. Drs. Charles G. Truax and A. Palmer Dudley, of the old Board, have been reappointed, and the new appointments include Drs. Richard Van Santvoord and Irving S. Haynes. When completed the visiting medical and surgical staff will consist of eight members, instead of five, as heretofore.

The Floating Hospital.— The first trip of the St. John's Guild floating hospital for the season was made on July 1st. The trips will be made on each week day during July and August, three trips a week from the east side and three trips from the west side of the city. Last summer the floating hospital made fifty trips, carrying 46,719 women and children, and at the seaside hospital of the Guild, situated at New Dorp, Staten Island, 1,836 patients were cared for. The boat stops at the seaside hospital on each trip.

A Generous Subscription.— A communication has been received by the Park Board from Cornelius Vanderbilt, President of the Botanical Gardens Society, stating that $250,000 have been subscribed by private individuals for the contemplated garden and asking that 250 acres in Bronx Park be set aside for the purpose. The city authorities some time ago agreed to appropriate land in one of the parks for the botanical gardens as soon as $250,000 should be raised by the Society, and doubtless the request for the Bronx Park site will be granted.

A Dispensary for the Long Island College Hospital.— The memory of the late Henry D. Polhemus is to be perpetuated by the erection of a dispensary building in connection with the Long Island College Hospital in Brooklyn. It will be the gift of Mr. Polhemus's widow, who has purchased three city lots for the purpose. The building will be five stories high, and will be known as the Polhemus Memorial Dispensary. The estimated cost of the structure, with its furnishings, is $250,000, and in addition to this Mrs. Polhemus will present the dispensary with an endowment fund of $250,000 for its maintenance.

Miscellany.

AN ACT TO REGULATE THE REGISTRATION OF BIRTHS IN RHODE ISLAND.

It is a fact well known to collectors of vital statistics, both in Rhode Island and elsewhere, that either from carelessness or design, a failure to register births is very common, resulting in marked detriment to vital statistics and in a recorded birth-rate much smaller than the actual.

In order to obviate this, at the instigation of the State Registrar, the legislature of Rhode Island in January, 1895, passed the following Act, entitled "An Act in Addition to Chapter 85 of the Public Statutes."

Section 1. Physicians and midwives shall, on or before the fifth day of each month, report to the clerk of each city or town a correct list of all children born therein during the month next preceding, at whose birth they were present, stating the date and place of each birth, the name of each child (if he has any), the sex and color of the child, the name, place of birth and residence of the parents, and the occupation of the father. The fee of the physician or midwife shall be twenty-five cents for each birth so reported, and shall be paid by the city or town in which the report is made.

Sect. 2. All acts and parts of acts inconsistent herewith are hereby repealed, and this act shall take effect upon its passage.

The State Registrar has issued a circular to physicians, appealing for their coöperation in carrying out the provisions of the Act.

BUFFALO BILL AND THE SICK CHILDREN.

During the late visit of Buffalo Bill and his "show" to this city the grounds upon which the show was held were very near the Children's Hospital. The music of the cowboy band, the sound of the gun-shots in the attack on the settler's cabin, etc., attracted the children's attention, and when they were told that the noises were made by *Indians* their grief at their confinement increased in proportion to their desire to see a real live Indian. One of them asked the visiting surgeon if there were no way in which this could be brought about, and the surgeon suggesting that he write a letter to Buffalo Bill and ask him. The boy wrote the following letter:

> "Dear Mr. Buffalo Bill.— We are a lot of little children lying on our backs in the hospital and we cannot move. We want to see an Indian very much. We have *never* seen one in our lives and cannot get out. Will you please send us one, so that we can see him?"

Buffalo Bill was evidently touched by this appeal, for presently six Indian braves, a squaw and a pappoose visited the hospital and walked about the wards in full regalia, greatly to the delight of the children. The Indians were about to execute a war dance for the children in one of the wards, when the chief demurred on account of the waxed floor, which he thought was too slippery for a proper performance of the ceremony, so that this part of the entertainment had to be given up.

Later, we are informed that those of the children who were able to walk were given tickets to the performance and went under the guardianship of one of the sisters.

It is doubtful if a greater treat could have been devised for the sick children than a sight of Buffalo Bill's Indians, and they probably never exhibited themselves before a more highly appreciative audience.

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Correspondence.

THE ILLINOIS STATE BOARD OF HEALTH AND THE NORTHWESTERN UNIVERSITY WOMAN'S MEDICAL COLLEGE.

Mr. Editor: — Enclosed please find copy of a set of resolutions unanimously adopted by the Illinois State Board of Health at its recent meeting held in Chicago, June 25, 1895.

Whereas, The Faculty of the Northwestern University Woman's Medical College adopted a set of resolutions, criticising the Illinois State Board of Health for having issued to three non-graduate students of said College, the State certificates entitling them to practise medicine, whom they claim were not entitled to receive them, and charging the Board with having adopted a lax policy in numerous other instances, thereby seriously detracting from the usefulness of the Board; and

Whereas, Although the resolutions were "ordered to be placed before the Illinois State Board of Health," they were furnished to the various medical publications of the country simultaneously with their presentation to the Board, and before the Board had opportunity to make any defence;

Whereas, The said College has not made any investigation of the methods or policy of the Board, and could not be in possession of information upon which to found such serious charges; and

Whereas, The Secretary of the Faculty admitted to the Secretary of the Board that the resolutions were adopted without due consideration, and so were not applicable to the present Board; and

Whereas, In the past two years no certificate has been granted to any applicant upon an average rating of less than eighty per cent. on all branches, and the questions and examination papers, and a tabulated record of all examinations are preserved, and are matters of record in the office; and

Whereas, It is not in the province of the Board to adopt any policy regarding the admission to its examinations of non-graduates, the law prescribing that "non-graduates shall submit themselves for examinations," and further prescribing that "the examinations shall be of an elementary and practical character"; Therefore, Be it

Resolved, That justice demands that the Faculty of the Northwestern University Woman's Medical College, and all others interested, inform themselves as to the methods and policy of the Illinois State Board of Health in conducting its examinations with a view to the establishment of the charges made, or of making such withdrawal, alteration or explanation of the charges as the facts may warrant, and further, that the Faculty inquire as to whether any individual interest or personal animosity prompted the drafting and circulating of the resolutions.

B. M. Griffith, M.D.
Sarah Hackett Stevenson, M.D.

Will you kindly give the same publication in the next issue of your journal? and greatly oblige,

J. W. Scott, M.D., *Secretary.*

METEOROLOGICAL RECORD,

For the week ending June 29th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..23	29.93	70	76	63	86	78	82	W.	S.	5	8	O.	O.	
M..24	29.95	70	79	62	65	70	68	E.	S.W.	5	5	F.	O.	
T..25	30.02	65	68	62	84	94	87	N.E.	E.	2	5	O.	F.	.22
W..26	30.10	61	64	58	95	87	91	E.	E.	8	4	O.	F.	
T..27	30.11	60	62	59	90	95	93	E.	E.	7	9	O.	O.	.21
F..28	30.12	62	64	59	95	95	95	E.	N.E.	13	6	T.	O.	.90
S...29	30.19	66	72	69	92	91	96	N.E.	E.	3	10	O.	F.	.05
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, June 29, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Measles.
New York . .	1,956,000	798	417	27.04	10.53	15.73	3.90	3.25
Chicago . .	1,600,000	—	—	—	—	—	—	—
Philadelphia .	1,139,457	432	176	24.15	9.20	19.64	4.37	1.38
Brooklyn . .	1,043,000	442	228	32.20	7.59	20.24	5.98	2.30
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	159	48	11.78	6.82	2.52	4.96	.62
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	105	47	21.85	5.70	20.90	—	—
Cincinnati . .	325,000	115	50	12.12	10.56	7.04	.88	4.40
Cleveland . .	325,000	82	32	15.30	7.32	8.54	—	1.22
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	35	9	17.16	5.72	8.58	—	—
Charleston . .	65,165	63	36	18.84	—	15.70	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	19	—	5.26	10.52	5.26	—	—
Fall River . .	92,233	34	16	26.46	2.64	26.46	—	—
Lowell . . .	90,613	—	—	—	—	—	—	—
Cambridge . .	79,607	—	—	—	—	—	—	—
Lynn	65,123	14	5	14.28	14.28	—	—	—
Springfield . .	50,284	17	6	29.40	5.88	23.52	5.88	—
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	13	5	15.38	7.69	15.38	—	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	8	0	—	25.00	—	—	—
Salem	33,155	9	2	—	11.11	—	—	—
Haverhill . .	32,925	7	3	—	42.84	—	—	—
Malden . . .	30,209	10	3	10.00	20.00	—	10.00	—
Chelsea . . .	29,806	6	1	16.66	16.66	—	16.66	—
Fitchburg . .	29,393	1	0	—	—	—	—	—
Newton . . .	28,837	6	1	—	50.00	—	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,954	9	3	—	33.33	—	—	—
Waltham . .	22,058	5	0	—	—	—	—	—
Quincy . . .	19,642	8	4	12.50	12.50	—	—	—
Pittsfield . .	18,802	2	1	—	—	—	—	—
Everett . . .	16,585	2	2	—	—	—	—	—
Northampton .	16,331	5	0	—	20.00	—	—	—
Newburyport .	14,073	0	0	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,474; under five years of age 1,116; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 579, consumption 225, acute lung diseases 189, diarrheal diseases 355, diphtheria and croup 90, measles 49, whooping-cough 28, typhoid fever 22, scarlet fever 20, erysipelas 8, malarial fever 6, small-pox (Cleveland) 1.

From whooping-cough New York 16, Brooklyn 6, Philadelphia 4, Nashville and Lynn 1 each. From typhoid fever New York and Cleveland 5 each, Brooklyn 4, Philadelphia 3, North Adams 2, Providence, Nashville and Charlestown 1 each. From scarlet fever New York 5, Boston 4, Philadelphia and Brooklyn 3 each, Providence 2, Nashville, Lynn and Quincy 1 each. From erysipelas New York 4, Philadelphia and Brooklyn 2 each. From malarial fever New York 2, Brooklyn, Washington, Cleveland and Charleston 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending June 22d, the death-rate was 16.2. Deaths reported 3,284; acute diseases of the respiratory organs (London) 186, measles 124, diarrhea 111, diphtheria 67, whooping-cough 49, fever 24, scarlet fever 23, smallpox (Liverpooland Oldham 1 each) 2.

The death-rates ranged from 6.8 in Croydon to 25.1 in Liverpool; Birmingham 17.1, Bradford 17.0, Cardiff 14.4, Halifax 18.9, Leeds 17.4, Leicester 14.5, London 15.1, Manchester 20.4, Newcastle-on-Tyne 12.8, Nottingham 15.2, Sheffield 16.9, Swansea 12.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 27, 1895, TO JULY 5, 1895.

Leave of absence for two months, to take effect upon his relief from duty at Fort Yellowstone, Wyoming, is granted **CAPTAIN CHARLES M. GANDY**, assistant surgeon.

Leave of absence for one month, to take effect upon his relief from duty in the Dept. of the Colorado, is granted **LIEUT.-COL DAVID L. HUNTINGTON**, deputy surgeon-general.

Leave of absence for two months is granted **CAPTAIN CHAS. B. EWING**, assistant surgeon.

FIRST-LIEUT. FREDERICK P. REYNOLDS, assistant surgeon, now at Fort Sam Houston, will proceed to Fort Bliss, Texas, not later than July 1st, and report for temporary duty, during the absence on leave of **MAJOR BLAIR D. TAYLOR**, surgeon.

Leave of absence for one month, to take effect about July 1st, is granted **FIRST-LIEUT. CHAMPE C. MCCULLOCH**, assistant surgeon.

Leave of absence for one month, to take effect between July 1st and 10th, with permission to apply for an extension of ten days, is granted **MAJOR BLAIR D. TAYLOR**, surgeon.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING JUNE 30, 1895.

PURVIANCE, GEORGE, surgeon. To proceed to Delaware Breakwater Quarantine as inspector. June 19, 1895.

GODFREY, JOHN, surgeon. Detailed as chairman, Board for physical examination candidates, Revenue Cutter Service. June 17, 1895.

IRWIN, FAIRFAX, surgeon. Detailed as chairman, Board to consider Necropsy Reports. June 15, 1895.

CARTER, H. R., surgeon. Granted leave of absence for fifteen days. June 24, 1895.

BANKS, C. E., passed assistant surgeon. Detailed as member Board to consider Necropsy Reports. June 15, 1895. Detailed chairman Board for physical examination candidates, Revenue Cutter Service. June 19, 1895. Detailed chairman, Board for physical examination of officers, Revenue Cutter Service. June 27, 1895.

KINYOUN, J. J., passed assistant surgeon. Detailed as member, Board to consider Necropsy Reports. June 15, 1895.

YOUNG, G. B., passed assistant surgeon. Granted leave of absence for thirty days. June 19, 1895.

BROWN, B. W., passed assistant surgeon. Detailed as recorder, Board for physical examination officers, Revenue Cutter Service. June 27, 1895.

ROSENAU, M. J., passed assistant surgeon. Detailed as recorder, Board to consider Necropsy Reports. June 19, 1895.

NYDEGGER, J. A., assistant surgeon. Granted leave of absence for five days. June 19, 1895.

STEWART, W. J. S., assistant surgeon. Detailed as recorder, Board for physical examination candidates, Revenue Cutter Service. June 19, 1895.

BLUE, RUPERT, assistant surgeon. Detailed as recorder, Board for physical examination of candidates, Revenue Cutter Service. June 17, 1895.

PROCHAZKA, EMIL, assistant surgeon. Granted leave of absence for twenty-six days. June 29, 1895.

ERRATUM.

In Dr. Mason's discussion of Dr. Welch's paper on Diphtheria in the report of the Association of American Physicians (page 648 of the JOURNAL of June 27, 1895), Dr. Mason is reported as saying that since the use of the antitoxin treatment the expenses of the Boston City Hospital for local re-agents, such as peroxide of hydrogen, have diminished $700. Dr. Mason's statement was *several hundred dollars*, not $700.

RESIGNATION.

DR. T. M. ROTCH has resigned the position of visiting physician to the Boston City Hospital.

RECENT DEATH.

ALBERT C. GORGAS, Medical Director, U. S. N., died at his home in Germantown, a suburb of Philadelphia, June 29, 1895. Dr. Gorgas was a native of Philadelphia and was graduated from the Jefferson Medical College in 1856. He entered the Navy August 30, 1856, as assistant surgeon, the sloop *Germantown* being his first appointment. He served on the East India Station from 1857 to 1860, then being ordered to the Receiving-ship *North Carolina* at New York. Commissioned surgeon in 1861, he was attached to the *Vandalia* of the South Atlantic Squadron until 1863. He then served for a year at the Naval Hospital at Norfolk, when he joined the *Juniata* of the South Atlantic Blockading Fleet. In 1867 he went out on the *Brooklyn* as fleet surgeon of the Brazil Squadron. Shortly afterwards he went to Portsmouth Navy Yard and from 1870 to 1873 was attached to the European Squadron as fleet surgeon, being stationed on the *Wabash*. He was on duty at the Naval Hospital, Annapolis, from 1873 to 1877, and went to sea for the last time in 1879 as fleet surgeon of the South Atlantic Squadron on the Flag-ship *Hartford*. He was at the Naval Academy in 1880 and at Chelsea Naval Hospital 1882 to 1885, and president of the Examining Board from 1885 to 1889. From this date to 1893 he was in charge of the Naval Hospital, Philadelphia. He then was transferred to the Museum of Hygiene in Washington, being only recently relieved. He was commissioned medical inspector October 6, 1873, and medical director March 4, 1881. He was present at the bombardment and taking of Fort Pulaski and the assault on Fort Fisher.

BOOKS AND PAMPHLETS RECEIVED.

Pettingill & Co.'s Newspaper Directory. Third edition. Boston, 1895.

Report of the Dairy Commissioner of the State of New Jersey for the year 1894.

King's College Hospital Reports; being The Annual Report of King's College Hospital and the Medical Department of King's College. Vol. I (October 1, 1893 — September 30, 1894). London. 1895.

Cod Liver Oil and Chemistry, by F. Peckel Möller, Ph.D., Author of Veileduing ved Bedömmelsen af Medicentran Nogle Norke Forhold et Hundredaars Jubilarum, co-author Parmacoporia Norvegica 1870, etc. London: Peter Möller. 1895.

Twentieth Century Practice, an International Encyclopedia of Modern Medical Science, by leading authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In twenty volumes. Vol. II, Nutritive Disorders. New York: William Wood & Co. 1895.

Epitomes of Modern Surgical Progress for Students and Practitioners. Urinary Surgery, by E. Hurry Fenwick, F.R.C.S., Eng., Surgeon to the London Hospital; Surgeon and Pathologist to St. Peter's Hospital for Stone and Other Urinary Diseases, etc. Illustrated. Bristol: John Wright & Co. 1894.

Ectopic Pregnancy: Its Etiology, Classification, Embryology, Diagnosis, and Treatment, by J. Clarence Webster, B.A., M.D., F.R.C.P., Assistant to the Professor of Midwifery and Diseases of Women and Children in the University of Edinburgh, with eighty illustrations of naked eye and microscopic appearances. New York: Macmillan & Co. 1895.

Dissections Illustrated. A Graphic Handbook for Students of Human Anatomy, by C. Gordon Brodie, F.R.C.S., late Senior Demonstrator of Anatomy, Middlesex Hospital Medical School; Assistant Surgeon North West London Hospital; with plates drawn and lithographed by Percy Highly. In four parts. Part IV, The Abdomen, with 16 colored plates and 13 diagrams. London and New York: Whittaker & Co.

Nerve-Suturing (Neurorraphy): Degeneration and Regeneration following Section; Microscopical Appearances. One of the Mütter Course of Lectures delivered before the Philadelphia College of Physicians, by DeForest Willard, A.M., M.P., Ph.D., Surgeon to the Presbyterian Hospital, Philadelphia; Clinical Professor of Orthopedic Surgery in the University of Pennsylvania. Reprinted from the International Medical Magazine. 1894.

On Diseases of the Vermiform Appendix, with a Consideration of the Symptoms and Treatment of the Resulting Forms of Peritonitis. A Dissertation presented to the University of Oxford for the degree of Doctor of Medicine, in April, 1894, by Herbert P. Hawkins, M.A., M.D., Oxon., F.R.C.P., Assistant Physician to, and Lecturer on Pathology at St. Thomas's Hospital, Assistant Physician to the London Fever Hospital, Late Radcliffe Travelling Fellow of the University of Oxford. London: Macmillan & Co. 1895.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum.................. 7
Adeps Lanae Co......................"N. K. W." 29
Albany Medical College.................. 18
Antikamnia Chemical Company...Antikamnia 30
Apollinaris Co.................. 14
Baker, L. W., M.D........................Riverview 19
Baker, Dr. W. H..........................Card 19
Bartlett, Dr. B. W........................Card 19
Battle & Co...........................Bromidia 26
Bellevue Hosp. Med. Col..... Sessions of '94-95 16
Boehringer & Soehne.....................Ferratin 12
Bowdoin College...........Medical Department 16
Boylston Medical Prize Questions............ 2
Breitenbach Co., M. J..........Pepto-Mangan 4
Castle, W. & Co..............Steam Sterilizer 5
Channing, Dr. Walter.................. 19
Chauncy Hall School.................. 31
Cocke, Dr. James R.................. 19
Codman & Shurtleff......Surgical Instruments 21
Coll. of Physicians and Surgeons, Boston... 16
Coll. Physicians and Surgeons, Baltimore, 16
Columbian University.................. 16
Crittenton, C. N..........Hydroleine, etc. 2, 4, 5, 13
Cutter, Dr. W. P.................. 19
Dartmouth College, N. H....Med. Department 16
Douglass, Dr. DeF..............Artificial Limbs 7
Edes, Dr. Robert T.........................Card 19
Fairchild Bros. & Foster..........Milk Mixture 1
Farwell & Rhines..............Diabetes Flour 2
Feeble-Minded Youth, Inst. for..Barre, Mass. 19
Fisk & Arnold....................Artificial Limbs 11
Flood, Dr. Everett.................. 19
Fougera, E. & Co..........Imp'g Pharmacists 8, 9, 27
Gear, J. Frank............Surgical Instruments 5
Goldthwaite, Dr. S. V.................. 19
Gould's Medical Dictionary.................. 29
Graham, Dr. Douglas......Treatise on Massage 26
Greene, Dr. E. M........Examinations of Sputa 19
Harvard Baby Food Co.................. 11
Harvard University........Dental Department 16
Harvard University.......Medical Department 32
Jefferson Medical College.................. 17
Johnson & Johnson.............................Kola 25
Kingsbury, Dr. A. D..........................Card 19
Lambert Pharmacal Co...................Listerine 25
Leedom, Charles...............Nuclein Solution 7
Lehn & Fink......................Mfg. Chemists 23
Lloyd, Andrew J. & Co. .....Manufg. Opticians 2
Londonderry Lithia Water.................. 24
Long Island College Hospital.................. 16
Mackie, Dr. L. V. G.................. Sanitarium 19
Marks, A. A......................Artificial Limbs 22
Martin, Dr. F. C....................Vaccine Virus 2
McElroy, F. J.....................Glass Syringes 11
Medico-Chirurgical College.................. 16
Norton, Dr. Eben C...........Mental Diseases 19
N. Y. Pharmaceutical Co.................. 14
N. Y. Polyclinic and Hospital.................. 16
Oakland Chemical Co.......Hydrogen Dioxide 6
Office To Let.................. 2
Pabst Brewing Co.................. 7
Patch, E. L. Co......................Lithia Tablets 31
Peake & Buzzell............Surgeons' Supplies 29
Pinaud, Ed.........................Sels Romains 13
Planten, H., & Son..........................Capsules 11
Post-Graduate, The.................. 17
Removal.................. 2
Ring, Dr. Allan Mott..........Nervous Diseases 19
Russell, Dr. F. W..............................Card 19
Schieffelin & Co....................Mfg. Chemists 3
Schulze-Berge & Koechl.......Migranin, etc. 7, 31
Stearns & Co., Frederick..................Kolavin 5
Stedman, Dr. Henry R..........................Card 19
Strong, Dr. S. E...........................Sanitarium 6
Thayer, Henry & Co.................. 22
Theodore Metcalf Co............................Coca 10
Twitchell, Dr. George B......................Card 19
Tyree, J. S................Antiseptic Powder 11
University of Maryland.................. 18
University of Vermont,.................. 17
Walker Pharmacal Co..................Phytoline 20
Walnut Lodge Hospital.................. 19
Warner, Wm. R., & Co.......................Pills.
Waterman, Dr. Thomas..Animal Vaccine Vi.
Weeks & Potter Co..........................Quinona
Weinhagen, H........................Thermometers
Wheeler Chem. Works....Saw Palmetto Comp. 2
Wheeler, Dr. T. B.......................Phosphates 21
White, Dr. Walter H..........................Card 19
Willard, Dr. A. J..............................Card 19
Woman's Hospital, Lowell.................. 19
Woman's Medical College, Baltimore....... 16
Woman's Med. Coll..of the New York Infirmary 16
Woodward, L. F.....................Stammering 19
Wool Oil Refining Co....................Wool Oil 20
Yale University..........Medical Department 16

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JUL 19 1895

PAGE

LECTURE.

The New England Invalid. Shattuck Lecture for 1895. *By Robert T. Edes, M.D.*, Jamaica Plain, Mass. 53

ORIGINAL ARTICLES.

Abnormal Attachment of the Atlas to the Base of the Skull. *By Daniel Denison Slade, M.D.*, Chestnut Hill, Mass. 57

A Case of Spontaneous Perforation of the Heart, with Obscure Symptoms. *By J. A. Tanner, M.D.*, Dorchester 62

CLINICAL DEPARTMENT.

A Case of Ophthalmoplegia Externa, Bilateral, Complete. *By Edwin E. Jack, M.D.*, Ophthalmic Surgeon to Out-Patients, Boston City Hospital; Assistant Ophthalmic Surgeon, Massachusetts Charitable Eye and Ear Infirmary 64

REPORTS OF SOCIETIES.

Boston Society for Medical Improvement. *J. G. Mumford, M.D.*, Secretary 66

A Case of Spontaneous Perforation of the Heart, with Obscure Symptoms.— Ophthalmoplegia Externa, Total, Bilateral.

American Surgical Association. New York, May 28, 29 and 30, 1895. (Continued.) 67

The Relations of the Lymphatic System to the Various Regions.— The Female Genital Organs, including the Uterus and Vulva.— Cancer of the Lip, Tongue, Floor of Mouth and Pharynx.— The Operative Treatment of Cancer of the Male Genitals.— Clinic at the New York Hospital.

RECENT LITERATURE.

Aseptic Surgical Technique. By Hunter Robb, M.D. Philadelphia: J. B. Lippincott Co. 1894. 70

A Treatise on Appendicitis. By George R. Fowler, M.D. Philadelphia: J. B. Lippincott Co. 1894 70

EDITORIALS.

Malaria 71

Partial Amputation of the Foot 72

Concerning Vivisection 72

Medical Notes 73

Royal College of Surgeons.— Mr. T. Grigor Brodie, M.D.— The Pittsburgh Eye and Ear Hospital.— Illness of Dr. Ruffer.— A Chart of the Sympathetic Nervous System. —The Increase of Rabies.— An English Medical Work in Greek.— A Carthaginian Truss.

Boston and New England.

Acute Infectious Diseases in Boston. — No Boylston Prize Awarded.—The Christian Endeavor Societies in Boston.— Veto of the Appropriation for a Branch Hospital. — The Stamford Milkman Escapes Trial.

MISCELLANY.

The Meccan Pilgrimage 74

Fatal Case of Traumatic Aneurism of Aberrant Right Subclavian Artery 74

A Good Fight against Cholera in South America 75

Meteorological Record, July 6, 1895 75

Record of Mortality, July 6, 1895 75

Army and Navy Services 76

Appointments 76

Books and Pamphlets Received 76

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See last page but one.

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Lecture.

THE NEW ENGLAND INVALID.[1]

SHATTUCK LECTURE FOR 1895.

BY ROBERT T. EDES, M.D., JAMAICA PLAIN, MASS.

THE provisions under which the Shattuck lectureship was established specify "Historical and other essays on the climate of Massachusetts or the diseases of its inhabitants, or such other subjects as said Society or its government may select."

These alternatives are surely liberal enough, and the committee have given me not the least hint to limit my choice, but it certainly seems in accordance with the wishes of the founder that some matter of decided local interest should be discussed in the discourse provided for by his liberality.

Common report and more or less jocose remarks attach the name of New England to one at least of the supposable causes of nervous affections. How justly is another matter, but it hardly requires this facetious etiology to make it appropriate for me to choose as my subject one which must have for every one of you, not strangely and exceptionally favored by fortune, a deep professional and often personal interest.

An eminent physician, not herself a native of New England, who looks upon a relative impairment of the reproductive functions as largely a phenomenon, though a highly complicated one, of acclimation and as closely connected with the neurotic constitution, says that "it *should* be more conspicuous in New England, whose rigorous climate differs more from that of old England than does the climate of the Middle States.[2]

Statistics, I think it is not rash to assume, are unobtainable as to the relative frequency of nervous invalidism in different portions of this country.

Inquiries of colleagues, whose wide and varied experience extends over more degrees of latitude than my own, have furnished me only with impressions, that less invalidism prevails north and south of the densely populated strip of coast from Boston to Washington and the great cities west of it. This, however, has undoubtedly far greater reference to mode of life than to climate, except so far as the latter influences the amount of out-door life.

Americans are called a nervous people. In fact, nervousness has been called the American disease.

Can we easily believe otherwise when we consider how rapidly the proportion of city dwellers is on the increase, and then the "fundamental morbid social conditions and tendencies which give rise to the nerve-shattering character of the life in great cities. To the city throng, especially those classes of the population which are discontented with their social position and seek to better it, the clerk and store-keeper who wishes to become a merchant and millionaire, the mechanic who would make of himself a manufacturer, the artist, writer, and specialist who thirsts for gold and distinction, the official who looks for a swift promotion; and, not less, the country laborer who hopes to find there better wages and a more enjoyable life. All these meet, in their struggles to better their circumstances, a crowd of competitors who look and strive just as eagerly after the shining mammon, after the idol of fame and distinction beckoning in the distance; and are not always careful of their means of reaching it. Then all the strength must be exerted, and if the nervous tension is not sufficient for the demands upon it, it must be helped with stimulants: tea and coffee and strong cigars must be made to spur on the jaded nerves, and hypnotics force a troubled sleep."

You give me credit perhaps for a good piece of description and a just appreciation of our dangerous conditions; but undeservedly so. These last sentences do not describe Boston or Chicago, but are from a writer in the quiet city of Munich, supposed to be devoted to classical art and to beer. Here can be no restless political ambition, no worship of the almighty dollar, no complicated American drinks.

This author (Lowenfeld) explicitly rejects the claim of Beard for nervous prostration as an American peculiarity.

Is not the disposing cause the spirit of the times and not the spirit of the country? Nervousness attacks the centres of civilization and of great interests, because there are concentrated those whose nervous disposition renders them more sensitive to the irritations of unrest, discontent and worry.

Whether we have more than our share is not easy to say; it would certainly not be strange if it were so. But there is no doubt that we have enough to make the subject one of the highest importance.

There are directions in which a historical treatment of the subject might be made very interesting, but neither my time, my opportunities nor my sense of what is due to this Society have permitted me to offer a *résumé* of the literature instead of my own gleanings, however scanty, from a field unfortunately only too familiar to most of you.

The question as to the gradual increase of nervousness, of nervous invalidism, like that of insanity, is a very interesting one, but, again like that, a difficult one to answer with precision; even more so in our case, since we have not even the approximately accurate information of hospital and census returns.

It must, of course, be admitted that these are not conclusive. And that any apparent increase of recorded insanity, instead of showing a progressive deterioration, is more likely, on the contrary, to be an index of more careful diagnosis and more efficient treatment, we are glad to believe.

Even such an approximation as a comparison of these returns afford, we cannot have in a matter so much less distinct, and affecting the community legally and financially so much less than does insanity. When the question of the relative health of successive generations comes up, one is apt to hear that some one remembers his grandmother or his great-grandmother who had a very large family and hardly knew a sick day. This, however, is not so conclusive as it appears, for it is most probable that it is one out of two grandmothers or four great-grandmothers who had the large family who is best recollected, while the other three who had only one or two children have naturally left fewer descendants to sing their praises; or, what is much more to the purpose, one remembers his robust grandmother better than he does his invalid great-aunt.

Neurasthenia has not been long enough separated off as a distinct condition to have accumulated around itself a mass of ancient literature.

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[1] Delivered before the Massachusetts Medical Society, June 11, 1895.

[2] Dr. Mary Putnam Jacobi: MS.

Hysteria, however, has done so, and its columns in the "Index Catalogue of the Surgeon General's Library," No. 34, include 210 titles of books on the general subject alone, going back to the latter part of the seventeenth century and becoming quite numerous in the early part of the eighteenth.

If, however, we accept, as I think we are justified in doing, miracle cures in the case of young women invalids, as very strong presumptive evidence of some kind of purely functional nervous affection, we can hardly say when we begin to get such cases.

I hope I shall not be accused of irreverence if I say that some of the miracles of the New Testament seem to have been of this kind. Hysterical trance is not an excessively rare phenomenon, the Jews are notoriously a neurotic race, and such cases have been mistaken for real death.

Cases and epidemics, evidently hysterical, are not rare in history, although of course it is those of a violent and, so to speak, picturesque character which are more likely to be recorded than the neurasthenic and bedridden types.

Even if it turns out that nervous invalidism is not a disease exclusively of the present century, or of Massachusetts, or of New England, it is certainly not necessary to tell you that the conditions at work to produce it are as abundantly present here and now as anywhere, and it would only be a reminder of a considerable portion of your own labor, anxiety and trouble if I were to insist upon the importance and living interest of the subject to every one of you.

The New-England invalid is with us all. The old doctor has carried her all his professional life, and yet she is ready to bestow the care of herself upon the young man just making his reputation, and proud to be trusted where so many have failed. No specialist can escape her, for she has a symptom for every organ. The physician cannot dispose of her to the surgeon, for, after her braces have given out, after her spine has been shortened by a vertebra or two, after her pelvis and her pocket-book are alike empty, she comes back to him "needing ONLY to be built up."

The surgeon can never flatter himself that he has seen the last of her, for when her ovaries and uterus have been safely bottled up where they can do no more harm, her kidneys may desert their proper sphere, descending to carry on the nefarious practices of their predecessors at the old place, or his first operations are successful only in providing a new location for a pain, to be cured by another.

But your troubles are the least. You see her occasionally. You must go, to be sure, when you know there is nothing to be done and you have not the time to do it. You must listen to the thrice-told tale of symptoms which you are as morally sure have nothing to do with any tangible lesion as if you had the patient upon the dissecting table. You must prescribe drugs which you know are useless and which you hope are inert, because you must appear to do something, or, worse yet, you may be driven to use those which are worse than useless, and which you too well know are not inert, because the necessity is absolutely forced upon you, and you cannot bear the charge of wanton cruelty, hoping that at some future day their use can be easily abandoned.

You are doing the most discouraging of work. You feel that you are in a treadmill from which there is no escape until you can resign your burden to another whose ignorance will give him enthusiasm, or are dropped discredited for a newer sensation.

But the mothers and the sisters, the husbands! for whom there is no holiday. The unwearying response to the constant call for relief from the pain which it is no satisfaction to them to call "functional irritation," from the distresses, the burnings, the flutterings, the quiverings, the throbbings, the tensions, the relaxations; the reproaches for indifference, the accusations of selfishness and the more trying repentance therefor, the ostentatious resignation of the misunderstood, the sympathy which they crave, the constant outflow of nervous force for which there is no adequate resupply in a confident hope of recovery; is it strange that we hear so often: "If you cannot take her there will soon be another?"

Is she not worth studying?

Among the earliest to call attention to the health of American women as a class, and not simply with a view to the treatment of individual cases, was Miss Catherine Beecher in her "Letters to the People on Health and Happiness," published now some forty years ago.

Without pretending to speak from a strictly medical point of view, but rather as an experienced teacher and philanthropist, and evidently a cultivated woman of sound common-sense, she took great pains to ascertain facts. The quotations I shall make are of value as testifying not merely to the conditions at the time of writing, but, by contrast, to that of her childhood some fifty years before. Miss Beecher was born in 1800, and for many years kept a large and celebrated school for girls.

She says: "But the American people have pursued a very different course. It is true that a large proportion of them have provided schools for educating the minds of their children; but instead of providing teachers to train the bodies of their offspring, most of them have not only entirely neglected it, but have done almost everything they could do to train their children to become feeble, sickly and ugly. And those who have not pursued so foolish a course, have taken very little pains to secure the proper education of the body for their offspring during the period of their school life.

"In consequence of this dreadful neglect and mismanagement, the children of this country are every year becoming less and less healthful and good looking. There is a great change in reference to this matter within my memory. When young I noticed in my travels the children in school-houses or on Sunday in the churches; almost all of them had rosy cheeks, and looked full of health and spirits. But now, when I notice the children in churches and schools, both in city and country, a great portion of them either have sallow or pale complexions, or look delicate or partially misformed.

"When I was young I did not know of any sickly children. But now, the children grow less and less healthy every year.

"Every year I hear more and more complaints of the poor health that is so common among grown people, especially among women. And physicians say that this is an evil that is constantly increasing, so that they fear, ere long, there will be no healthy women in the country."

Later, after several pages of statistics, evidently gathered in a scientific spirit and with a clear appreciation of the possible errors in that deceptive source of knowledge, based on inquiries among hundreds of representative individuals, and finding among them and their acquaintances a very large proportion of invalids, with a very small number of really healthy women, she speaks of her personal knowledge as follows:

"I am not able to recall, in my immense circle of friends and acquaintances all over the Union, so many as ten married ladies born in this country and century, who are perfectly sound, healthy and vigorous. I have nine married sisters and sisters-in-law, all of them either delicate or invalids except two. I have fourteen married female cousins, and not one of them but is either delicate, often ailing or an invalid. In my wide circle of friends and acquaintances all over the land out of my own family circle, the same impression is made. In Boston I cannot remember but one married female friend who is perfectly healthy." And the other great cities according to her are no better.

Miss Beecher saw in all the melancholy picture which she drew merely the natural result of a neglect of well-known hygienic laws, and published her book in order to call the attention of her country-women to them. Let us hope with effect. It is certainly my belief that many of these laws are, if not better known, more generally heeded than they were then.

I have so far made but little distinction between the various forms of chronic ill-health among women, and this for the reason that the distinctions were practically but little known to the lady whom I have quoted. Miss Beecher, indeed, is inclined to lay especial stress upon uterine displacement, but those who are familiar with the rapid and constant changes in gynecological theory will see in this nothing more than a deference to the prevailing fashion at the time she wrote. Her statistics are not detailed enough to have great weight in this particular. Her therapeutics are of more general application.

For three years and a half I have had opportunities for observing a considerable number of chronic female invalids from among whom serious pelvic disease, other chronic diseases, and distinct forms of insanity, have already been weeded out by competent diagnosticians; and also a proportion of the more acute and curable forms removed, so that my clientele includes very largely cases of selected chronic invalids without obvious organic disease. It is this circumstance, and not any desire to prejudge the question, which has made me use the feminine gender throughout.

How the number of female invalids in the community would divide up between ourselves and the gynecologists it is not easy to say, since the numbers we receive, as well as those which we find help in the hospitals devoted to the diseases peculiar to their sex, are limited not by the demand, but by the number of beds these institutions respectively offer; and these are not enough.

Many also go from one to the other, and it is by no means beyond the limits of possibility that the mere fashion of the day or the personal views of the patient determine at which kind of institution she first seeks relief. Indeed, even in the concrete, when the case is actually before us, I find that my gynecological brethren as well as myself are sometimes at a loss to know upon which set of symptoms, pelvic or nervous, both being present, the chief importance is to be put, and to determine which is cause and which is consequence. That vicious circle of which these two sets of symptoms form a large part of the circumference is likely to be completed and complicated by a third set seated in the digestive apparatus.

In going over the records of one thousand persons, with a view to classification, I have made, excluding cases which are either not essentially nervous or of a kind not to interest us in the present connection, the following classes: melancholia, neurasthenia, hysteria and hypochondriasis. This list does not indeed take cognizance of all the doubtful and mixed cases, of which there are endless combinations; but a classification which should undertake to do this thoroughly would amount to but little beyond affixing a name to each individual case, or at any rate would break up our figures into such small groups as to have no value for statistical purposes.

I have arranged 97 as melancholia, 490 as neurasthenia, 197 as hysteria and 33 as hypochondriasis.

I have no doubt, however, that if the same material were submitted to a dozen different neurologists every one of them would make a different distribution from this and from all the others, often widely so.

Even if we admit that neurasthenia is a distinct and separate well-marked morbid entity, I think no one of experience will doubt that it is easy for hysteria to assume many of its features, as well as those of melancholia and hypochondriasis, and, on the other hand, the soil of neurasthenia is one upon which any or all the other symptom-groups may very easily flourish.

A little more elaborate, and perhaps quite as practicable, a classification might be as follows:

(1) The Malingerer, pure and simple.
(2) The Exaggerator.
(3) The Constitutional Neurotic.
(4) The Hysterically Excitable.
(5) The Neuromimetic.
(6) The Confirmed Neuromimetic.
(7) The Tense Neurasthenic.
(8) The Limp Neurasthenic.
(9) The Melancholic.

The extreme cases of many of these classes take us very close, and in melancholia distinctly beyond, the line of actual insanity. To speak of these in a little more detail:

(1) The malingerer, feigning disease out of whole cloth, in which she has no belief, I do not think I have ever seen in the female sex. I am inclined to doubt her existence outside of hospitals or workhouses, or perhaps in the rare case of malicious girls seeking to gratify a grudge or gain notoriety, like those, for instance, who were the principal accusers and witnesses in the days of Salem witchcraft.

I think that most women, unless instigated by some very special motive, who might feign disease for any length of time, would be almost sure to end by believing in it themselves.

(2) The exaggerator we all know well, honest but whimsical, silly and self-indulgent.

(3) The hysterically excitable, with her acute exacerbations, is also sufficiently familiar. Much of the earlier literature under this title of hysteria relates to this form.

(4) If one were willing to use the vernacular in a form which might be offensive to those to whom it

applied, he would be likely to speak of that class here called "constitutional neurotics" as "cranks" or "crooked sticks," persons whose inherent peculiarities of nervous organization are such as prevent them from acting or living in harmony and comfort with a community of a more average and less peculiar character. They are mild embryo paranoiacs.

Some theorists might substitute for the word "constitutional" "congenital," but this seems to me objectionable as emphasizing too strongly the tendency which undoubtedly exists in many if not in most cases; but which, I believe, can be, to a considerable extent, either aggravated or relieved by the environment of the early years, to the extent even that education may have almost as powerful an influence as heredity. Habits of thought are largely formed and modified in childhood.

(5–6) The next two groups, or neuromimetics, for which, with some enlargement, Sir James Paget's expressive name is used, are, in the first, those grades of hysteria involving anesthesiæ, paralyses of all sorts, severe neuralgias; which, in the second, become contractures more than spasmodic, with wasting and with a marked decrease in the hopefulness of prognosis as time goes on. Among these are the most remarkable cases of invalidism, and also of the marvellous cures thereof.

It must be acknowledged, though I hardly know whether with sorrow or with pride, that the hysteria rendered classical by Charcot, the concentrated, highly educated and fully developed hysteria of the Salpêtrière, is not the prevailing type with us. The American neurologist must content himself with fewer and less picturesque cases.

Neurasthenia has been divided into two groups, according to its type rather than anatomically as is more usual, the latter appearing to be a classification according to what we might expect rather than what we see.

(7) The tense neurasthenic is apt to be small, slightly underweight, with a dark complexion (though with many exceptions), poor appetite, constipation, flatulence, a quick pulse and heart beat, and a sphygmogram that indicates no great amount of force in the heart, but considerable resistance comparatively in the arteries, like that supposed to belong to interstitial nephritis, although of much less vigor. She will talk to you about books or science, if inclined in that direction, and often very interestingly, as well as about herself; but when she does reach the more important subject she describes herself as "all keyed up," "thinks she shall fly," and so on. You can see that she is making constant movements for no purpose except to work off nervous tension, and many of her muscles are in a state of contraction when doing no useful work. A limb is kept in position, not by relaxing all the muscles and letting it rest, but by contracting the antagonists on each side. Her rigging is set up too taut.

By reason of these feelings, and not always because of any pain, she is likely to sleep badly. She cannot work without headache and backache, but she tries to get sleep by overexertion, and usually with poor success. It is upon this class of cases that the usefulness of the Delsarte system as a therapeutic agent chiefly rests. It aims to cut off a useless and wearing expenditure of force.

Some fourteen years ago I took a number of sphygmograms among the patients of the Adams Nervine Asylum[3] and found nearly all of them to have a character closely resembling that to which Mohammed was at that time exciting a great deal of attention by declaring the precursor of chronic Bright's disease. In fact they agreed very well with some which were actually of that character.[4] Several of these patients have recently been heard from, and, so far as I am aware, not one of them has died of renal disease.

(8) The limp neurasthenic is apt to be of a lighter complexion, and may or may not be well fed. Her bowels are sluggish, but less obstinately constipated, and her appetite and digestion are below par. She does not speak of her "nervous" feeling, but talks of being tired, and when she sits or lies is quiet and does not strain her muscles. She is apt to say that "all she wants is rest," and yet she may have been doing nothing but rest for years. She is less likely to care for matters outside of her own condition, and I should say her prospects of recovery were on the whole more distant than those of her predecessor on the list.

Either of these conditions may be more or less chronic, and accompanied by more or less of the headache, backache and incapacity for mental exertion.

(9) The melancholia of our inmates includes chiefly the milder forms known to alienists under that name, although of course now and then a case is met with which has very evidently gone far beyond the line of insanity.

As I have reminded you, the literature of hysteria goes back many centuries, but chiefly with reference to the more acute and striking forms, while anything like a careful study of the neuromimetic, for our purpose much more important, forms, is a more modern growth, reaching its culmination only under the auspices of Charcot and his school. It is quite evident that the cause of hysteria, or, at least, of the spasmodic hysteric manifestations, is to be sought for in no modern or local conditions. It might perhaps be questioned whether the more modern habit or manners of repression, of keeping the feelings concealed, a habit which increases with civilization and fashion, with higher social position, and is especially strongly marked in our Anglo-Saxon race, has not a good deal to do with the diminished prevalence of the more outspoken and striking forms, and the substitution therefor of the quiet, insidious, obstinate paralyses which so closely counterfeit organic disease, and are in reality so much more serious than a good old-fashioned hysteric "fit" which comes on slight provocation and is soon over.

Would it not be better if our customs and "good form" permitted a patient to scream, as she so often says she wants to, instead of restraining her feelings for propriety's sake, and developing a neuralgia or paralysis or an attack of "nervous prostration."

It is held by Breuer and Freud that the essential part of the action of mental or moral shock in the production of hysteria lies in the absence of the appropriate motor reaction, as, for instance, when a lower official received from his superior an insult which he could not resent. The correctness of this view seemed to be demonstrated by the result that when the history of the affair was completely elaborated by hypnotism and fully talked over, the hysterical symptoms disappeared. This is not far removed from ordinary observation that it is much better to "get mad" and be done with it than to cherish the grievance in silence. The effort of inhibition seems to call for as much nervous expenditure as that of action, and in such a case as that just cited is of that peculiarly unremitting and wearing character which is so silently destructive of nervous integrity. There should be a proper balance between inflow of irritations and the outflow of motor energy.

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[3] See Boston Medical and Surgical Journal, May 19, 1881.

[4] Compare tracings No. 1 and 14. No. 1, typical interstitial nephritis; death. No. 14, cure by faith; now well.

Neurasthenia, on the other hand is, by name at least, a much more modern development. The name is hardly twenty years old, and although the condition itself must have been occasionally met with, perhaps for all ages, yet its prevalence is a growth of modern times and a part of the price which we pay for a more complicated civilization. It is certainly much less prevalent among those whose labor is chiefly manual and involves but little responsibility. The histories of one thousand persons show this quite clearly, in the great preponderance of teachers, students, nurses, milliners and dressmakers, over domestic servants or factory hands. In this respect it differs distinctly from hysteria.

I do not recollect hearing of a case among the negroes, nor does my scanty knowledge of the subject furnish instances among the uncivilized races, where again hysteria seems to be well known. It is somewhat difficult to draw the line with certainty, however, between the different occupations which may be claimed as nervously exhausting. I recollect a girl in the City Hospital who said that her doctor had told her that "her brain was all worn out," and when I inquired further as to the nature of this exhausting employment, was informed that it was pasting stamps upon shoes.

(To be continued.)

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Original Articles.

ABNORMAL ATTACHMENT OF THE ATLAS TO THE BASE OF THE SKULL.

BY DANIEL DENISON SLADE, M.D., CHESTNUT HILL, MASS.

During the past year I received at the Department of Osteology, in the Museum of Comparative Zoölogy, Harvard College, for purposes of identification, portions of a human skeleton which had been lately exhumed at Chicopee, Mass. Among other interesting points presented by the bones, my attention was particularly directed to the cranium, with the base of which the atlas was fused. The comparatively small size of the skull, which was generally well preserved, the delicacy and moderate predominance of its various prominences and processes, as also the dental series, which was normal, these, together with certain characteristics presented by the bones of the limbs, unmistakably pronounced the subject to be that of an aboriginal female, aged twenty-five or thirty years.

The interest excited by the above-mentioned case induced me to investigate the subject of atlanto-occipital fusion, as far as my limited means allowed, and to present the results arrived at in the present paper. Much to my regret, it has been impossible, from the lack of material, to ascertain the frequency of its occurrence among the North American Indians.

The atlas of the human subject may morphologically exhibit several variations from its normal condition. As these variations occupy different regions of the bone, they have been classified in the order of their frequency in any one situation.

(1) The transverse processes of the atlas may present diminution or exaggeration in development. In the former case their normal size may be simply diminished, while in the latter different directions may be taken by the increased growth, producing in some cases a foramen, and in others osseous pillars which may fuse with neighboring parts of the base of the cranium, as, for instance, with the jugular process.

(2) The posterior arch may present deficient or increased development. Under the first condition, the deficiency produces a space in the median line which is the result of an entire absence of co-ossification between the lateral halves. Under the second condition the variation consists of an enlarged and prominent posterior tubercle, or of an increased depth of the laminæ.

(3) The anterior arch may in adult specimens exhibit at its median line a suture which usually disappears at an early age. This abnormal condition is probably due to non-union of the lateral masses, which, in the failure of the usual centre of ossification to appear, furnish too feeble a supply of osseous material for their consolidation. Again, the anterior tubercle may become much enlarged and project downwards and backwards in front of the axis, constituting a hypapophysial spine, such as is seen normally existing in the New World monkeys, especially in Mycetes and Lagothrix.

(4) There may be several abnormal variations simultaneously in different parts of the atlas. Thus there may exist complete fusion of the lateral masses with the occipital condyles, and both arches may present a similar condition in their relation to the borders of the foramen magnum.

The posterior arch may be thus completely fused while the anterior arch is free, or the anterior arch is partially or entirely anchyclosed and the posterior free. These abnormalities have been considered as the result of early inflammatory action, followed by more or less absorption, to which process the disappearance of parts is to be attributed.

Dr. William Allen, in his paper entitled "Varieties of Atlas in the Human Subject," cites several cases which illustrate the various conditions that I have mentioned above. Some of these are given by him on the authority of other writers. Two cases, however, had come under his own observation.

In one of them, that of an aged female, whose history is unknown, deficiency occurred in both arches. The posterior arch was entirely deficient, and in the anterior arch there was a symphysis in the middle which admitted of considerable movement. The transverse processes, lateral masses and articulations, were normal. On dissection of the soft parts — after giving a detailed description of bundles of ligamentous fibres which sprang on each side from a slight tubercle behind the lateral mass, and which being traced backwards, interlaced with verticle fibres uniting the posterior margin of the foramen magnum with the arch of the axis — Dr. Allen says: "During the rotation of the head, and the consequent angular motion induced between the lateral halves of the arch, a slight slackening of the transverse ligament of the atlas takes place, also a slight narrowing of the transverse measurement of the atlantal part of the spinal canal; but displacement backwards of the odontoid process is prevented by an unusually strong suspensory ligament, and the narrowing of the canal compensated for by the absence of the laminæ."

A second specimen, of which Dr. Allen gives a drawing in his paper, is described by him as presenting the following peculiarities, namely, a deficiency of the posterior arch, accompanied by an increase of the width of the spinal canal; and the anterior arch, although perfect, is nearly straight, while the transverse processes are depressed and thrown forward to such an extent that their front parts lie in the same line as the anterior arch. By pressing on the sides of the laminæ their free ends are approximated so as to close the posterior deficiency and reduce the width of the spinal canal to its normal dimensions. By this means also the proper curve is given to the anterior arch, and the tips of the transverse processes made to assume a more natural direction. The writer thinks that these abnormalities are not due to deficiency of osseous growth but rather to some force exerted at an early period, which, acting like a wedge between the back parts of the atlantal articular surfaces, produced their separation and thus altered the direction of the transverse processes, and also caused the disjunction between the halves of the posterior arch. "The effect is such as might result from the forcing of the wide back parts of the occipital condyles forwards between the anterior narrower parts of the superior articular surfaces of the atlas by strong extension of the head on the vertebral column in parturition in cases of face presentation, and it is highly probable that this is the explanation."

In a case described by Luschka, the lateral masses and upper edge of the anterior arch, as also half of the posterior arch, were joined with the corresponding parts of the occipital bone, while the other half of the posterior arch was absent.

Boxhammer[1] gives a case, in which the lateral masses were completely fused with the occipital condyles; the anterior arch was perfect and free; the posterior arch was open in the middle, one of its halves being free, the other completely fused with the occipital.

Schniffer[2] describes a case in which the atlas was so intimately fused with the occipital bone as to be with difficulty distinguished. Its lateral masses were so developed and so much displaced as to allow the occipital condyles to articulate with the axis directly. The axis was fused with the third cervical vertebra, the assimilation between their arches being so great as to give one the impression that the common spine belonged rather to the third vertebra than to the second.

A case, similar in some respects to the last, is given by Kussmaul, where the patient, a boy of twelve years, was subject to convulsive attacks of epilepsy, which were induced whenever the head was strongly moved to either side. A post-mortem examination showed that the atlas had a deficiency in its posterior arch and a very movable joint in the centre of the anterior arch. "The imperfect laminæ," says Kussmaul, "were caused to overlap whenever the head was rotated, a constriction of the canal being brought about. This, no doubt, was the cause of the epileptic seizures, by producing pressure and irritation of the membranes of the cord."

Mr. Lawrence, surgeon at St. Bartholomew's Hospital, exhibited an interesting specimen to his class. This showed a bony union between the three first vertebræ and between the atlas and the occiput. The patient from whom it was taken was a boy of twelve years at the time of his death. Five years previously he had suffered from a tumor in the neck, of considerable magnitude, which, being pressed upon, produced a complete state of coma; at other times, the functions of the brain were not impaired. After some time the tumor entirely disappeared and the child apparently recovered a good degree of health. At the end of three years a fresh tumor appeared in the groin, in the situation of a psoas abscess, which was opened, and the patient eventually died from exhaustion. On examination of the specimen the foramen magnum was found natural; but at its anterior left side a thick process of bone, half an inch in length, projected into the cavity of the skull. This proved to be the odontoid process of the axis, which was thinner and more sharply pointed than is normal. On looking downwards through the foramen magnum the rings of the atlas and axis were found to be very irregularly placed, and in such a manner as to contract the foramen magnum to little more than one-third of its normal size. Instead of the posterior arch of the atlas being placed immediately below the foramen magnum, it was contained within the foramen itself. The right half of the ring also encroached considerably within the circumference of the foramen, while the left half had been destroyed by the disease. The axis was also displaced, the left part of the ring still further narrowing the canal, already much diminished by the displacement of the atlas and by the odontoid process which occupied the left side and front part of the foramen magnum. The spinal cord, however, in this confined and tortuous portion of the canal was sufficiently loose to indicate that it had not undergone pressure. The atlas was considerably removed from its relative situation with the base of the skull, being placed obliquely and pushed in front of the condyles, where it was firmly fused with the occiput. The left transverse process had been absorbed, and also the left side of the ring, to the extent of nearly an inch. The axis was removed a little backward; and from the loss of the left part of the ring of the atlas it had ascended so that the upper part of its body was in contact with the edge of the foramen magnum, and its odontoid process had passed through the foramen and projected into the cavity of the skull. This vertebra was of normal size, but was firmly united to the atlas above by bony union, and below to the third vertebra, which last was natural in appearance and position.

The above case illustrates what amount of pressure the brain and cord will endure when it is gradually applied, and how effectually the restoration of the bony parts is due to osseous fusion and to the process of absorption.

In a paper entitled "Abnormal Attachment of the Atlas to the Base of the Skull," published by Professor Macalister, of Cambridge University, reference is given to specimens in the Cambridge Pathological Museum, as also to cases reported by other writers.

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[1] Die angeborenen Synostosen an der Enden der beweglichen Wirbelsäule. Zeitschrift für rationelle Medicin, 111 Rieke, Bd. 15, p. 1.

[2] Virchow's Archiv, vol. lxxiv, p. 320.

This author remarks that congenital fusion of the fetal cartilage of the atlas to that of the occipital region is extremely rare. By pathological processes, however, the whole ring of the atlas may become entirely united to the margin of the foramen magnum. In a Cambridge specimen — which is comparable with the case reported by Schiffner, which I have mentioned — there is perfect fusion of the right side of the anterior arch, of the articular processes, of the true transverse process, and of the posterior arch, with the contiguous part of the occipital bone; "indeed, the transverse process and the paroccipital are so far blended into a single process that it juts down from the skull and apparently touches the transverse process of the axis, for which it has a facet."

The articular process and posterior arch, or part of it, may be fused with the contiguous parts of the occupit, while the central part of the anterior arch is separated from the basi-occipital by a small interspace.

In another specimen from the Cambridge Museum, the anterior arch is complete, but has an immature appearance, being developed in the centre and slender on each side where it joins the lateral mass. The interval between the arch and the basi-occipital is a narrow transverse slit. The condyles of the occipital bone and the superior articular processes are perfectly united. The posterior arch is complete and anchylosed to the hinder lip of the foramen magnum. On the left there is no interruption in the fusion of the arch and the occipital bone. The posterior segment of the transverse process is on this side anchylosed with the occipital, behind the paroccipital process, and stretches out to impinge on the paramastoid of the temporal by a convex surface. The costal process is slender and its extremity is joined to the transverse process by a very fine bony spicule.

Professor Macalister refers to the cases of Boxhammer, Somner and Luschka, mentioned by Dr. Allen; and also to a specimen from the Berlin Museum, described by Grawitz,[3] in which the posterior arch is fused while the left transverse process is free. In another, from a young child, the posterior arch is completed by a fibrous cord.

The articular processes may be anchylosed to the occipital condyles while the arches and transverse processes are free. This form of synostosis is by far the most frequent, and, according to Macalister and other authorities, is an acquired pathological condition due to osteitic or arthritic inflammations. Among other examples of this most common form of synostosis in the Cambridge Museum, cited by the writer, the skull of an ancient Persian, a middle-aged man, exhibits one that is complete. "There is a wide atlanto-occipital gap anteriorly, and the four condylar foramina are normal. The oblique and check ligaments were unossified, and the paroccipital processes are small. There are bony spicules around the anchylosed surfaces, but few other traces of disease. The upper edge of the posterior arch is thick and upturned, extending towards the wide foramen magnum. The whole atlas appears to have slipped a little forward, so that the anterior arch appears to lie on a plane in front of the anterior lip of the foramen, and the plane of the foramen magnum extends behind the prominent posterior tubercle of the atlas."

The atlas may be attached to the base of the skull by the osseous union of the transverse process with the jugular process of the occipital bone. A paroccipital process may become lengthened, and in this condition anchylosed with an ascending spur-like process from the axis. Macalister has a specimen somewhat of this form, but in his, the two processes are not anchylosed at their place of meeting.

The paroccipital process may be a descending column, starting from the outer edge of the exoccipital next to the occipito-mastoid suture, and either articulating with the transverse process of the atlas by a flat surface or being anchylosed to it.

Again, cases are recorded in which a styliform process is produced from the posterior angle of the transverse process of the atlas and becomes articulated or anchylosed with a normal paroccipital process.

Examples of these methods of union between the transverse process of the atlas and the neighboring regions of the base of the skull are given by various writers, as mentioned by Macalister. Such cases are dependent upon ossification of the ligamentous structures connecting the several parts.

The following paper by Sommer, is interesting and instructive:

> Synostosis of the atlas is not of the rarest occurrence, but it demands special attention when found in a subject whose previous history has been known. With few exceptions the specimens in existence are from individuals whose identity during life had been lost, and the abnormality has been only discovered after maceration, when it was no longer possible to obtain its history. At the lunatic asylum at Allenberg only two instances have been observed where the identity has been fully established. In regard to the rarity of the occurrence of synostosis, there is no doubt that many instances of its presence escape notice, no noteworthy symptoms having presented themselves during life, and even when an autopsy was made, there was no special reason calling for an examination of the base of the skull. Whenever an adequate search has been made in any extensive collection of dissections, these abnormalities have proved to be comparatively numerous. Under these circumstances it has not been possible to establish a percentage of their occurrence. In the entire literature which contains the statistics of autopsies scarcely 20 to 30 undoubted cases of synostosis are published; and while, according to this statement, its occurrence seems to be extraordinarily infrequent, and even to be disappearing entirely, Italian observers, especially Lombroso, with his methodical investigations, have recently found a very considerable number of examples. Among normal male skulls from the collection of bones made at the battlefield of Solferino, Lombroso met with synostosis of the atlas in .34 per cent., which might express the true probability of frequency, in view of the very large amount of material examined. On the other hand, the number which have been found among the skulls of criminals ought certainly to be too large. Lombroso records finding this condition in four out of 51, and his pupil found two in four criminal skulls.

It may be remarked, parenthetically, that these investigators do not think that they are obliged to see any mere coincidence in the above statement, but rather look upon this abnormality as a somatic indication of moral depravity, even as they so regard the presence of a third median groove in the cerebellar portion of the occipital bone. Whether this interpretation is correct, farther investigation can alone show. Moreover, if one desired to suppose that the Italian race was particularly favored in this respect, Rust's old statement could be produced in evidence, which considers inflammation of the spinal cord at the atlanto-occipital articulation, in those cases where the malformation is not congenital, to be traceable to the practice of bearing heavy burdens upon the head. That this custom is more widespread in Italy than in Germany, for example, admits of no doubt, and a greater frequency of inherited synostosis would, therefore, not be improbable.

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[3] Virchow's Archiv, lxxx, p. 463.

In regard to the two cases in the Allenberg Lunatic Asylum, it may be said that both were diagnosticated during life, and the conditions presented were discovered, after maceration, in a search for other anomalies. In 100 lunatic skulls only two cases of synostosis! But, surely, still it cannot be said that two per cent. is a correct ratio of its frequency among lunatics. I give this number with all reservations, and simply remark that in 50 skulls that I have since carefully examined, I have found no cases.

The first of these two Allenberg cases has just been described by Dr. Casprzig, in a dissertation little known; and it was also briefly announced by me in a work upon lunatics' skulls. Here, therefore, I need to give only a synoptical extract describing the relations between the occurrence of synostosis and the health of the individual. The patient, previously quite healthy, was found in his sixteenth year unconscious after a night passed roaming about in the open air. Soon afterwards he complained of violent pains in his head and of anginal symptoms. Then a rheumatic inflammation of the atlanto-occipital articulation evidently arose, which later disappeared, but left behind an anchylosis permitting rotatory movements to a limited degree but which rendered bending and extending the head quite impossible. Moreover, on the third day of the illness, a violent attack of epileptic convulsions, which had not been observed professionally, came on. Afterwards this affection was less marked, but the patient rapidly became insane, and was received at the lunatic asylum as a person dangerous to the public. Here he finally died, at the age of thirty-six. Nothing worthy of note occurred to interrupt the regular progress of his disease, so well known to professional experience.

The second Allenberg case occurred in a girl who was apparently healthy until the fourth year, when epileptic fits were developed. At twenty she lost her mind, and two years later became an inmate of the asylum, where she died at the age of thirty-six. The following conditions were shown at the autopsy: The atlas was rudimentary in its development. The middle portion of the posterior arch was wanting, so that it was only represented by its roots behind the articulating masses. On the right side the synostosis is more extensive than on the left, where the arch is quite free. The anterior arch is fused only at the articulating surfaces. In consequence of the stronger compression of the anchylosed mass of bone on the right side the otherwise normal articulating surface of the axis here stood some millimetres higher than on the other side. The anterior portion of the margin of the foramen magnum, which at the middle is left free, is sharp but in no wise atrophied. Upon the external surface of the basilar portion of the occipital no abnormalities were found.

In conclusion, let me add to the above descriptions, a few remarks from the clinical standpoint. Both skulls belong to the epileptic class. In the first case there is no doubt that after a "cold," an arthritis of the atlanto-occipital articulation was set up and so — as an immediate consequence — epilepsy developed itself. In the second instance every indication of the period when the synostosis may have developed itself is evidently wanting; the commencement of the epilepsy was, however, determined at the fourth year of age. It is most probable that synostosis occurred before this period, because the atlas in this case, the patient being thirty-six at the time of her death, is only in a rudimentary form, and, therefore, an infantile, if not even an embryonic disease of it, is probable.

In both instances, there is in connection with this abnormality a not inconsiderable narrowing of the foramen magnum. Now, Casprzig has remarked, in his above-mentioned dissertation, that Solberg, in several cases of epilepsy, has made the final cause of the convulsions a probable stenosis of the vertebral cord, especially of its uppermost portion, by which the medulla oblongata might be functionally encroached upon. Casprzig accordingly believed that in his case he could refer the epilepsy, almost simultaneously appearing, to the arthritis and to the stenosis of the foramen magnum brought on by it. In regard to the second case of synostosis, likewise an epileptic, the condition is a coincidence to which I allude for the sake of further investigation, without wishing to draw a decided conclusion from the scanty material afforded.

The following case, reported by Langerhans, is instructive as showing the very early age at which synostosis may occur, while the synchondrosis between the anterior arch and the lateral masses was as yet unossified.

The subject of it was a boy of five years who had generally been in good health, until he was prostrated by scarlet fever and carried to the hospital, where his death occurred from renal complications.

On maceration of the parts a slight asymmetry at the base of the skull was perceptible. Portions of the atlas were not united. The anterior arch consisted of small detached bones which occupied their normal position beneath the middle of the basi occipital. The lateral masses were decidedly congruent. The projections on the right side were very short and ended in a sharp point, while on the left they were somewhat thin and longer and did not reach the anterior rib rudiment. The articulating surfaces were smooth and not fused. The left side of the posterior arch was united with the edges of the foramen magnum by a bony bridge, so that the foramen was bounded on that side by the inner margin of the atlas, and was thus so encroached upon that its form was rendered rhomboidal. The right side of the posterior arch terminated in a sharp point, but otherwise was normally formed. The axis presented no pathological conditions.

The following specimens of atlanto-occipital fusion have lately come under my own personal observation. Unfortunately, the existence of this condition is only made evident after death, when in all the cases that here follow, the identification of the skull with the individual during life was lost and their history before death is therefore unknown.

The skull of the adult female Indian discovered while excavating a sand bank in Chicopee, Mass., and alluded to at the outset of this paper, presented a complete fusion of the right lateral mass and the corresponding half of the anterior arch with the occipital bone. The left portion of the anterior arch remained free. The atlanto occipital articulating surface upon the right side was reduced in size and flattened. The posterior arch on its right side was much reduced in thickness, and was anchylosed with the margin of the foramen magnum by a thin osseous plate, which, projecting downwards and backwards gave the appearance of an outgrowth from the occipital bone, and thus interfered with the normal contour of the foramen. There was no trace of any portion of the left side of the posterior arch, which had evidently been completely removed by absorption. The basi-occipital is considerably asymmetrical. The facet upon the anterior arch, in correspondence with the odontoid, is rather to the right of the centre, thus giving an appearance of a turning in that direction. The amount of absorption which the atlas has undergone in this case, throughout nearly its entire surface, is remarkable.

A skull from the collection of the Biological Laboratory of the Museum of Comparative Zoölogy presents the following conditions: The basi-occipital is nearly symmetrical. The lateral masses of the atlas and the anterior arch, with the exception of a small portion at its centre, are fused with the occipital condyles and the basi-occipital. The posterior arch is entirely free and a slight diminution in its thickness is evidently due to absorption. The median tubercles of both arches are well developed. This specimen is remarkable for the prominence of all the features presented in well-marked and complete cases of synostosis.

With the assistance of Dr. Dorsey I have examined the collection of the skulls in the Peabody Museum at Cambridge with the following result. Only six cases were discovered among the entire number where synostosis was present even in the smallest degree. The life history of none could be ascertained.

No. 27,290. Stone grave, Brenthwood, Tenn. Female, adult.

Both lateral masses are completely anchylosed. The left transverse process is joined to the occiput by a strong bony process which seems to be formed equally by the atlas and the occiput. The posterior arch is entirely free. The anterior arch is completely anchylosed, except for the extent of three millimetres to the left of the anterior tubercle. The left lateral mass projects much beyond the right, and the left articular surface is also considerably larger than the right. The inclination of the anchylosed atlas is such that a line passed through it horizontally would form an angle of 15° with a line passing through the bregma and the alveolar point.

No. 9,185. Female, adult.

In this specimen, the entire atlas, with the exception of the right transverse process, which is anchylosed firmly to the occipital condyle, has been broken away. Owing to this imperfection it is impossible to ascertain to what extent the synostosis had proceeded.

No. 25,132. Female, aged.

Synostosis complete, including the transverse processes. The posterior arch is separated for a space of two millimetres. The alveolar arch is partially absorbed, and this process of absorption has attacked the atlas in certain places, and also the occiput.

No. 13,287. Male, adult.

Both lateral masses completely fused with the occiput, more especially the left. The anterior arch is perfectly free. The right half of the posterior arch is also free.

Ancient skull from a cave in the Sierre Madre, Mexico.

In this case there is no synostosis between the atlas and the occiput, but there is a slight amount between the atlas and the odontoid process of the axis. The central portion of the posterior arch is absent, owing to absorption, a condition which has also produced a cavity in the basi-occipital.

Modern skull from Labrador. Female, aged.

In this specimen the synostosis is slight and imperfectly shown. The posterior arch of the atlas is very delicate, rounded, and absent at the central portion, a condition probably due to absorption.

I have lately received from the Curator, Professor Whitney, the following communication in regard to specimens of synostosis in the Anatomical Museum of the Harvard Medical School.

"The skulls with synostosis of the atlas have been reduced to two, as in one the union was simply accidental. The following is the description: No. 3,590. Of unknown origin, probably female, middle aged. The right half of the atlas is smoothly united to the base of the skull by its posterior arch, which is very much thickened laterally and encroaches somewhat upon the foramen magnum. The articular surface for the axis is flattened, instead of being cup-shaped. There is no roughening or enlargement of the openings for the vessels in the neighborhood. The left half is wanting; to what extent it may have been developed cannot be stated; certainly there was no bony union of the anterior arch. The articulating surface of the condyle of the occiput on the right side is directed outwards instead of backwards and upwards as normally. This is a case of irregular development, with partial synostosis."

Unnumbered specimen (Dr. Dwight's collection of spines) from a white male, aged twenty-four.

This is a ligamentous preparation, so that an accurate description of the bone cannot be given. There is an evident atrophy of the posterior arch on the left side, with a bony union to the base of the skull. There is no evidence of disease.

The following case, of which I give a synopsis, was published in the *Journal of Anatomy and Physiology*,[4] by Dr. Thomas Dwight. Although the life history of the subject was unknown, the conditions presented by the specimen were so similar to those of the one reported by Kussmaul, of which I have previously spoken, that it is fair to infer that in the present case, epileptic symptoms might have been induced by any strong movements of the head to either side.

The atlas consisted of three separate pieces. The left lateral mass and the posterior arch reached nearly to the median line. The right lateral mass, with the beginning of the posterior arch and a portion of bone two cubic centimetres long held by ligaments at either end, represent the greater part of the posterior arch; neither of these reach the median line. A small fibrous band between the two sides completes the arch behind. There is no anterior arch whatever; the lateral masses are entirely separate, being, however, connected together by a firm transverse ligament, and also attached to the axis by ligaments extending from the sides of the back of the odontoid to the inner side of the lateral mass. No anchylosis is spoken of. The deficiency of rotation in the atlas is compensated for by the flatness of the occipital condyles.

In regard to the etiology of synostosis, only suggestions can at present be offered. It has been advanced by several authorities, as I have already stated, that this condition is due to arthritic affections, commencing at an early period, the presence of which, however, is very rarely determined during life. Professor Dwight is of the opinion that, in some cases, especially where the arches are separate, the joints become anchylosed through disease; "but, I think," he says in a communication to me, "that in many of the striking cases, in which the arch seems little more than a ridge on the occiput, we must look for the cause in some early disturbance in the development of the spine, such as causes the suppression of a vertebra or occasionally of half a vertebra, or the increase or diminution in the number of ribs."

While there can be but little doubt that, in the occasional cases reported, the epileptic convulsions observed are due to abnormalities discovered only through maceration and after death, we have as yet very little basis upon which to found the theory that their origin depends upon synostosis, either in an incipient or in an established condition. As to the theory, which was originally advanced by Rust and since maintained by Italian observers, that synostosis may be traceable to the practice of carrying heavy burdens upon the head; it should be said that, while this may not be impossible, especially as the greater frequency of this abnormality is stated to be found among the Italian than among other Continental nations — where the custom is not pursued to the same extent — a much larger number of well-established facts must be brought together before synostosis can be proved to become hereditary, or that epilepsy is dependent upon its presence as a factor. The same may be said in regard to traumatic causes, such as heavy blows upon the back of the neck, either criminal or accidental, as by snow-slides from houses, injury to the spinal column, by falls upon stairs and sidewalks, to children by falls from bed during sleep, by strains however produced; all of these may cause inflammation that extending upwards, terminates in an anchylosis between the atlas and the base of the skull, to be verified only after death.

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[4] Vol. xxi.

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A CASE OF SPONTANEOUS PERFORATION OF THE HEART, WITH OBSCURE SYMPTOMS.[1]

BY J. A. TANNER, M.D., DORCHESTER.

On the 6th of December, 1894, about six o'clock P. M., I was called to Mr. E., a well-built, well-preserved, strong and active man for his age of eighty-four years, and found him suffering from a severe pain in the epigastric region, the pain extending to the right hypochondriac region. Accompanying the pain were nausea and straining efforts to vomit, with erructations of gas. The pain came on suddenly, and no cause could be traced of over-eating or error of diet. There was a history of a slight slip of his right foot on the ice several hours previous, as he was returning home from his business. There was no rise of temperature; the pulse was full and strong and beating about 80 per minute; the respiration was regular, and no more rapid than would be looked for in any one suffering with pain. No complaint was made of distress in breathing. I found on inquiry that he had felt well during the day, had eaten his dinner with a relish, had a movement of the bowels and passed water freely. Remembering that some eighteen months' previous, I had seen him in an attack somewhat similar, which was considerably relieved by the vomiting of undigested food, and fully relieved by the after administration of Squibbs' compound tincture of opium, I gave him a mild mustard draught as an emetic. This in a short time caused an easy evacuation of the stomach, a small amount of partially-digested food and considerable gas appearing.

The nausea and straining to vomit was relived, but there was only a slight relief from the pain. One teaspoonful of Squibbs' mixture, well diluted with water, was then given; and in the course of three-quarters of an hour, the pain was much abated. I left the patient about 7.30, when he was quite comfortable, with respiration and pulse regular and normal. At 9 o'clock the patient was visited again; and as there was some return of the pain, half a teaspoonful of the Squibbs' mixture was given with good effect, and at 10 o'clock he was easy and comfortable. At 3 A. M. I was called in a hurry. I found the patient in a state of collapse, the respiration rapid and catchy; the pulse feeble, intermittent and beating at rate of 120 per minute; the hands and arms, feet and legs were clammy and cold, there was an abundant frothy, watery, bloody, mucous expectoration, with a loud and coarse rattle in the throat on inspiration and expiration, a condition of general edema of lungs; the finger-nails and lips were cyanotic; half a teaspoonful of aromatic spirits of ammonia was given by mouth, and brandy was used hypodermically. The pulse and breathing improved, and these remedies were continued, a steady improvement of the symptoms following, so that in an hour the patient was practically out of the collapse, but he commenced to complain of severe pain.

At this stage I wished to use morphia, but finding the family and patient had an *extreme* prejudice against it, and considering the age of the patient, I gave up the use of it, and concluded to use Hoffmann's anodyne, which would relieve pain and also act as a stimulant of the heart and respiration; so a teaspoonful was given every half-hour, until relief from pain was secured. In two hours' time the patient was so comfortable and all the symptoms were so much improved that I left and went home; the pulse then beating regular and at the rate of 90, the respiration regular and 24, with very little expectoration, and all signs of edema of lungs rapidly disappearing.

I saw the patient again about 10 o'clock, when I informed the family that I did not know what was affecting him and a consultation was desirable. Dr. R. was called, who suggested old man's pneumonia with referred pain, and on examination detected râles on the right side. I admitted the possibility, but demurred, as the pulse and respiration did not point that way, and three-quarters of a degree of fever was rather low for pneumonia. Having nothing else to base a diagnosis upon, that idea was held to during that day and up to the morning of the third day, when another consultation was held with Dr. R. Nothing was brought out this time, and time was relied upon to decide. In the meantime there were intermissions of freedom from pain, though it was gradually becoming less amenable to the Hoffman's anodyne, while it shifted somewhat from the epigastric to the right hypochondriac and lumbar regions. A peculiar distress was complained of at intervals in reference to the lower part of the chest. The patient could not describe it, excepting that he felt like tearing something out that was gnawing. The patient ate with a relish and the kidneys and bowels acted well. This state of affairs continued until the fifth day, when all idea of pneumonia had to be abandoned; at this time tympanites and tenderness showed up in the right lumbar region, considerable gas passing from stomach and bowels. The idea of appendicitis was then to be considered and guessed at; and as I was becoming more puzzled than ever as to what I was contending with, Dr. H. was called, and after a careful survey of the entire field we could determine nothing and decided to continue the previous treatment. We so informed the family, and the case continued, the symptoms gradually growing worse and the pain and distress in the chest becoming harder to control. Repeated examinations of liver, chest and heart revealed nothing, excepting a dulness of the valvular sounds, something to be expected in the aged. The examination of the urine revealed nothing. So, absolutely in the dark as to what was the cause of so much trouble, the case continued to be handled as it had been, entirely upon the expectant plan.

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[1] Read before the Boston Society for Medical Improvement, April 15, 1895.

The symptoms progressed from bad to worse until the seventh day, when I made up my mind that whatever the cause, death would be the result. I so informed the family, and said to them to call in any one they wished to; so Dr. H. was called again.

The pain and distress of the chest had now ceased to be amenable to the anodyne and was so strong and wearing that I had the trained nurse use inhalations of chloroform. Three ounces were used in the course of three or four hours, but with results almost negative.

Dr. H. then arrived; and the result of the second consultation was to tell the family the case was a puzzle and beyond us, that we fully agreed as to the result being death, and all we could do was to make that as easy as possible, to do which, the hypodermic morphia must be used.

About 5 P. M. the morphia was commenced, one-eighth of a grain, with the appropriate amount of atropia, being injected into the forearm; after waiting twenty minutes and there being no apparent relief, one-tenth of a grain more was injected; and again in twenty minutes one-tenth of a grain was used, when relief followed, and in about an hour the patient dosed off into a quiet sleep, which lasted about eight hours. He awoke quite bright and comfortable; but in an hour's time the pain returned with renewed vigor, and the distress of the chest was very bad. The trained nurse then injected morphia, having to use one-half grain before relief was obtained. Rest and some sleep followed for six hours, when the morphia was again resorted to. The patient at this time was weak and showed signs of rapid failure. Relief was obtained again by the use of nearly one-half grain of morphia, which lasted for only three hours, when rapid failure followed and death about 6 o'clock, the pain and distress disappearing without morphia an hour before death and the mind being clear up to a few minutes before death.

He was taken sick on the afternoon of the 6th, about 6 o'clock, and died about 6 o'clock on afternoon of the 14th, just eight days. During the sickness, especially during the first six days, there was a peculiar nervous element in the case that is worth noting. On entering the house I could hear him groaning from pain; but when I entered the room and talked with him a few minutes, the pain and distress apparently disappeared, and he would feel comfortable and talk with me as if nothing was the trouble. After leaving the room, the pain and distress would return. This happened night or day when I went into the room. Especially marked was this remission of symptoms when Dr. H. was first called; so marked was the remission then, that there was apparently nothing the matter with the patient, and I was somewhat afraid that the doctor might think he had been called out from the city on a foolish errand. The last two days this peculiar action was not present.

I then asked for an autopsy upon the ground, that we did not know the cause of death, and that the result might be of benefit to suffering humanity.

Dr. W. F. Whitney made the autopsy, Dr. H. and I being present. The result was as follows:

Body of a well-developed old man. Autopsy eighteen hours after death. Rigor mortis well marked. Moderate lividity of dependent parts of the body.

Head not opened.

Lungs bound to the chest walls and diaphragm by scattered fibrous adhesions. Did not collapse fully. On section a very abundant red, frothy fluid flowed and could be squeezed from the cut surface. No solidification found.

Pericardium adherent over the greater part of the left ventricle by soft fibrinous adhesions readily torn away. When this was done a hole the size of a knitting-needle was found in the wall of the left ventricle from which dark fluid-blood oozed. This hole was situated about one-and-one-half inches from the apex and about the same distance from the septum. A little reddish serous fluid was found in the pericardial sac, but no free blood. A section through the wall of the left ventricle showed its walls to be thinned and softened towards the apex while at the base it was of normal thickness, but yellow and opaque. Over the thinned and softened portion was an adherent, more or less stratified, red-and-white thrombus which filled by estimate a third of the cavity of the ventricle. All of the cavities of the heart were distended with dark fluid-blood. The valves were normal.

The right coronary artery was normal, though slightly contracted shortly after leaving the aorta.

The left coronary artery was rigid and contracted about one inch from its origin, and there was a clot completely filling the vessel at this point and adherent to the walls.

The peritoneum was normal, and the abdominal viscera, beyond slight senile atrophy, presented nothing abnormal beyond marked venous engorgement.

The diagnosis is: Atheromatous degeneration of the coronary arteries; thrombosis of the left coronary artery; myomalacia cardis; with perforation and cardiac thrombosis; recent fibrinous pericarditis; edema of the lungs; old pleuritic adhesions; venous engorgement.

The thrombus and the pericardial adhesions seem to have been sufficient to have prevented the escape of any considerable amount of blood through the rupture.

The autopsy cleared up the cause of death, but not the symptoms for future application; and on looking up the literature of the subject I find nothing that would have helped out in making a diagnosis even had any suspicion existed as to the actual trouble. I will quote but little, as all authorities give about the same as to symptoms, etc., of ruptured heart.

Flint's "Practice of Medicine," in speaking of rupture of the heart, says: "This accident is generally incident to fatty degeneration. It occurs, however, as an effect of cardiac aneurism, or myocardiac abscess. It rarely happens in persons under seventy years of age. Usually it causes instant or speedy death; but, if the perforation be small, it may be temporarily plugged by a clot, and life continue for hours and even days. I have known death to be delayed for six hours after the symptoms denoted the occurrence of the rupture. The symptoms are those which sudden compression of the heart by the accumulation of blood in the pericardium would be expected to produce, together with the loss of blood. In most cases, however, there is no time before death, for the observation of symptoms. Rupture has been repeatedly observed to occur in connection with a paroxysm of precordial pain resembling angina pectoris."

Quain says: "The symptoms of rupture of the heart may be described as those which are premonitory, and those which occur at the time of the accident. The former are such as indicate a diseased condition of the organ, namely, breathlessness on exertion, palpitation, more or less irregularity of pulse, and faintness. In some instances recorded these symptoms were so slight as hardly to attract attention; in others so severe as to cause intense suffering. In the majority of the cases noted in the table referred to, no mention is made of any preceding symptoms, death being sudden. In several cases it is distinctly stated that no symptoms preceded the fatal attack. The occurrence of the lesion itself, when the patient has lived long enough to describe the sensations, has always been marked by intense cardiac suffering, more or less distress in breathing, restlessness, rapid and irregular pulse, faintness, pallor, coldness of the skin, sometimes vomiting, and by various nervous symptoms. When life is prolonged beyond a few minutes, there may be more or less intermission in the progress of these symptoms; but the whole attack is marked by anguish more or less severe. The duration of the attack itself from the first fatal seizure varies remarkably. In 71 out of the 100 cases alluded to, death was sudden, occurring within one or two minutes. One patient, however, lived eight days; one, six days; one, three days; five lived over forty-eight hours; three lived under twenty-four hours; and 19 under twelve hours. . . . The special symptoms indicative of a fatal seizure are, in addition to those already mentioned, severe precordial pain, dyspnea, vomiting, cyanosis, pallor, loss of consciousness, and convulsions. . . . In the way of treatment of rupture of the heart little can be done. The patient's suffering may be relieved by hypodermic injection of morphia or by the use of other sedatives. Perfect rest should, if possible, be obtained."

In the case I am reporting the pulse was regular, full and strong during the entire period, excepting when in the state of collapse in which I found him nine hours after the seizure, and on the forenoon of the day of death when it showed some intermission. There was no precordial pain whatever; at first there was no dyspnea or any chest symptoms; the distress coming on the third day was not dyspnea, but seemed to be a pain low down in the chest, more on the right than left side; so low was this, I at times thought the diaphragm was in some way affected, rheumatism or rupture of the diaphragm entering my mind as a possible cause of the suffering. There was no vomiting after the first clearing of the stomach by an emetic. Cyanosis was only present when in the collapsed state, and that passed off in four hours. Pallor was only noticeable in the collapse. Loss of consciousness was not present at any time. Convulsions were absent, but severe cramps in the gastrocnemius muscles bothered the patient at times after the second day; he was subject to these and had been for several years.

Taking a view of the symptoms as given in the quotations and contrasting them with those in the case I have described, it hardly seems possible that the same affection is referred to; and after carefully considering these symptoms, I see nothing that specially points to rupture of the heart more than to other affections not of the heart, in which we meet the same symptoms. So it would seem that a diagnosis of rupture of the heart cannot be made out with any certainty in any case during life. An autopsy gives the only positive diagnosis.

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Clinical Department.

A CASE OF OPHTHALMOPLEGIA EXTERNA, BILATERAL, COMPLETE.[1]

BY EDWIN E. JACK, M.D.,

Ophthalmic Surgeon to Out-Patients, Boston City Hospital; Assistant Ophthalmic Surgeon, Massachusetts Charitable Eye and Ear Infirmary.

THE patient, a girl, two years of age, was first seen by me in February, at the infirmary, in the service of Dr. Standish. At that time both parents were living; they were and always had been well. Since then the father has died of pneumonia. There is no history on either side and there are no signs in the mother of tuberculosis or syphilis. There is one other child, which is perfectly well and there have been no miscarriages. The patient when born was perfectly healthy, no skin trouble of any kind has ever been noticed. She has recently been examined by Dr. J. J. Thomas, who found heart, lungs, etc., normal. I have found nothing abnormal in the urine.

The history of the case, as near as it can be got, is as follows. When six weeks old the child had "spasms" which were said by her physician to be due to "palpitation of the heart." At that time there were no eye symptoms. She seemed to be well in every way till last June, when she became cross and restless, cried at night a good deal, rolled the eyes around and at times looked cross-eyed. The mother stated that during or shortly after this sickness the left lid drooped and the left eye turned out. In August the child was seen by Dr. Bullard at the Children's Hospital, and with his kind permission the result of the examination at that time is given. Everything normal except the eyes. Left external strabismus, left partial ptosis, enlargement of left pupil.[2]

The present condition of the patient, which is the same as when first seen by me in February, is this, Partial ptosis both eyes. With the chin somewhat elevated in her habitual way, the right lid comes just to the upper periphery of iris, the left slightly below this. The occipito-frontalis is in almost constant contraction, arching the eyebrows. There are the characteristic retracted head and sleepy appearance of partial ptosis. An apparent very slight divergence is present; the globes are not unduly prominent. Right eye can be moved very slightly to the right, not at all to the left. The left eye cannot be moved either way. There is no upward movement of either eye, movement downwards is possibly present to a very slight extent. Power of convergence wanting. In looking in any direction the head is invariably turned fully. Both pupils respond readily to light, but the left does not become quite so small as the other. The fundus of the right eye is normal. In the left there is a large patch of atrophied choroid, irregular in outline, extending downward and inward from the disc; it is at least four discs breadth in its longest dimension and three in the widest. Over this area black pigment is irregularly scattered.

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[1] Read before the Boston Society for Medical Improvement, April 15, 1895.

[2] In a more recent examination by Dr. Bullard some enlarged glands behind the right ear and in the supraclavicular region were found.

There is little difficulty, I think, in referring the ophthalmoplegia in this case to a nuclear origin. There has been apparently a progressive paralysis of all the external muscle, the internal being exempt, except possibly in the left eye. This, in connection with the partial nature of the ptosis and the bilateral occurrence, leaves little room for doubt.

Von Graefe reported the first case of this kind in 1856. He supposed that there was an intracranial trouble, probably a tumor, at the base, and thought it remarkable that the sight was unaffected and that there were no mental symptoms. This view, however, he altered later in 1866, on account of the negative result of an autopsy by Klebs in a case wholly similar. In 1868, by a new observation, he compared ophthalmoplegia externa to labio-glosso-pharyngeal paralysis without suspecting a nuclear origin, at the same time remarking on the integrity of the sphincter and ciliary muscle and the partial nature of the ptosis. The first autopsy in which change in the nuclei was found was by Gayet in 1875. The details of the anatomy of that region, however, were not then known, and Gayet was unable to explain the exemption of the internal ocular muscles. In the same year the hypothesis of vascular trouble at the origin of the paralyzed nerves was brought forward by Camuset. In 1878 Hensen and Völckers by experiments, made the knowledge of the nuclei more certain and on the basis of what they found Förster was the first to explain the exemption of the internal muscles by the partial affection of the nuclei. Without knowledge of these later facts Hutchinson attributed ophthalmoplegia externa to a nuclear origin and ophthalmoplegia interna to an orbital lesion. In 1880 Parinaud demonstrated that the internal as well as the external paralysis could be explained by lesion of the nuclei, but situated at different points. About this time Hutchinson and Gower, by actual demonstration in a chronic case of progressive ophthalmoplegia, proved the nuclear seat of the trouble and urged strongly the analogy of such cases with progressive bulbar paralysis and progressive muscular atrophy. Lichtheim in 1882 stated these facts still more forcibly and agreed with the nomenclature given by Wernicke — acute and chronic polioencephalitis superior, this in contradistinction to polioencephalitis inferior in floor of the fourth ventricle, or bulbar paralysis.

This short history which shows the seat of lesion in such cases has had much to confirm it in autopsies since that time. I will briefly mention the results of all the post-mortems which I have been able to find up to the present time, including both acute and chronic cases. There have been 22 cases in which there was destruction or compression of the nuclei secondary to other processes. In 11 of these there were tumors, mostly tubercles. One of these was a case of ophthalmoplegia externa, complete and bilateral. In 10 there was hemorrhage in the region, eight being acute and two ophthalmoplegia externa, bilateral — facial paralysis and other symptoms were present. There were two cases of softening. In 19 cases the nuclei themselves were affected primarily. Acute hemorrhagic inflammation in seven cases: one of these ophthalmoplegia externa, bilateral, incomplete, with other symptoms. Another of the same kind had right facial paralysis, somnolence, optic neuritis and alcoholic delirium. Still another, bilateral ophthalmoplegia externa with somnolence and delirium. In these was found an acute inflammation of the nuclei with abundant punctate hemorrhages. It was on the basis of these observations that Wernicke gave the name polioencephalitis superior. There were in this group two other cases of ophthalmoplegia externa, bilateral, complete, but without ptosis, both with alcoholic delirium, one with unilateral facial paralysis. In 12 cases there has been found degeneration of the nuclei, either inflammatory or atrophic. In some of these cases the same lesion was found in the nuclei further down as in the ocular group, this fact pointing strongly to the analogy of the two diseases. In the atrophic form the cells were less numerous, shrunken, and often deprived of their prolongations. One of these was a case of congenital ptosis. In two cases there was sclerosis or proliferation of the ependyma and in another patches of sclerosis. In one case there is no mention of the nature of the nuclear lesion and in eight autopsies nothing was found in the nuclear region. This may be explained by the fact that the microscope was not used and the lesions were too slight to be recognized without. In one a careful microscopic examination revealed nothing. Mauthner supposed that the disease had not lasted long enough to allow atrophy or other alteration to become manifest.

The 19 cases in which the nuclei were primarily affected, represent the genuine nuclear ophthalmoplegias. The full typical form of this is the progressive paralysis, in which one after another of the ocular muscles becomes attacked either with or without reference to function. The exemption of the internal muscles proves almost without doubt the central origin. An exception to this rule, however, has been reported by Möbius. A man, sixty-two years of age, had ophthalmoplegia externa and at his death the brain and medulla showed nothing, but the external branches of the third, the fourth and sixth nerves were wholly degenerated; other cranial nerves showed a like change.

Most of the writers on this subject give as the probable anatomical cause in cases which have not died, a degeneration of the nuclei, and in our own case, in the absence of other indications, we must suppose the same.

Nuclear paralysis may exist alone as a single disease or as is more common, it is complicated with or a part of other diseases. Of these, bulbar paralysis, tabes and syphilis are the most frequent, and after these disseminated sclerosis, general paralysis, progressive muscular atrophy, facial paralysis, trigeminal disturbance and others. These are the chronic cases. In the acute form, bulbar symptoms, facial paralysis, diabetes and trigeminal disturbance, tuberculosis and alcoholism are the commonest. In at least thirty-two reported cases bulbar paralysis or progressive muscular atrophy have been associated and in three the three diseases have been present together. In four cases there has been an involvement of the orbicularis, this pointing to the probable connection of this branch of the facial with the nucleus of the third nerve. Somnolence, sometimes almost invincible, psychical disturbance and general body weakness are often present.

There is still left for inquiry the primary cause of the affection. In the chronic cases little is known. Alcohol, trauma, syphilis and diphtheria are the only real primary causes given. In the acute form, however, more is known. Alcohol, diphtheria, tuberculosis, diabetes, injuries, chemical poisons, constitutional anomalies, cold, acute and chronic infectious diseases and decayed meat are all mentioned.

The disease is more common in males than females and more frequent in adults, though many cases in childhood are reported and many congenital paralyses are doubtless of central origin. Möbius has given a classification of eye paralyses which are congenital or slowly develop in childhood; he attributes them to a probable primary atrophy of the nuclei. The full form, he says, is ophthalmoplegia externa, bilateral, total: all other forms can be regarded as parts of this. The internal muscles are never affected, the facial may be involved. Disturbances of sensibility are wanting in all cases and the patient is, as a rule, wholly sound.

In general, the health may be perfectly good or there may be present any of the diseases which are so frequent accompaniments.

The prognosis as regards life depends upon the nature of the case. If the nuclei are affected secondarily it depends, of course, upon the primary process and on whether other vital nuclei become involved. In the nuclear cases proper, leaving out of consideration the complicating diseases, the intensity of the original cause, alcoholism, etc., and the spreading to more vital centres are the chief things on which the prognosis rests. Some acute cases die, many recover with disappearance of the eye paralyses. The paralyses of single muscles which occurs so frequently in tabes and in disseminated sclerosis very often go away. The chronic progressive paralyses usually persist. I have found the records of but few cases which got better. One was a complete bilateral ophthalmoplegia externa which got well in less than two years under potassic iodide and galvanism. Dr. J. J. Putnam has kindly spoken to me of another case, unpublished, in which the eye paralyses were complicated with bulbar paralysis, weakness of limbs and other symptoms. At the end of two years the patient was practically well. In the present case the cause is unknown, for I do not think much importance can be attached to the choroidal atrophy or the few enlarged glands. As far as they go I should suppose they pointed to syphilis. The prognosis is unfavorable, the more so from the lack of apparent cause.

Treatment is indicated by the original cause and in absence of such indication, potassium iodide, strychnia and galvanism should be tried.

Physiology in the Public Schools.— A letter was received by the principal of the —— school the other day, from a parent whose daughter is a member of the class in physiology, and is as follows: "Dear Miss ——: I don't want you to learn my daughter any more about her insides. It ain't decent and it turns her against her victuals. Respectfully, ——."

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. G. MUMFORD, M.D., SECRETARY.

Regular Meeting, Monday, April 15, 1895, Dr. C. J. Blake in the chair.

Dr. J. A. Tanner reported

A CASE OF SPONTANEOUS PERFORATION OF THE HEART, WITH OBSCURE SYMPTOMS.[1]

Dr. Whitney demonstrated the specimen, and spoke of the conditions which lead to rupture of the heart. The rupture had occurred near the apex of the left ventricle and its course was irregular, and the opening into the pericardium was covered by adhesions, and little blood had escaped.

Dr. Vickery: I have listened with great interest to the account of this case, and I never met with a case either in my experience or reading like it. It would seem to me that the cause of death was the weakness of the left ventricle and not the effects of the rupture. The seat of the pain was interesting and perhaps in a way throws us into a little more obscurity about the diagnosis of similar cases than we were in before, because pain in the abdomen in cases of rupture of the heart has been noticed by several writers, and it has been regarded as due to the distention of the pericardium with blood. Last year Dr. John Gordon, of Aberdeen, and Dr. Naismith both spoke about cases where pain in the abdomen was complained of as a symptom of slow hemorrhage into the pericardium; and Dr. Gordon explained it as probably due to irritation of the vagus nerve, but here in Dr. Tanner's case is the pain, and not so good a chance for irritation of the vagus. The duration of the case, as has been said, is unusual.

Dr. Sabine: In connection with this case I should like to mention one which I saw two or three months ago. I was called one afternoon to see an old lady who had that very afternoon come down from the country making a railway journey of three or four hours. She was then suffering from a severe substernal pain, more a distress as she described it than sharp pain. The day before she had eaten a very hearty dinner in the middle of the day, and among other things she had eaten quite a number of apples at the end of the dinner. Soon after that she began to have discomfort; this same pain which followed her up, kept her up all night; and on the morning of the day when I saw her a physician was called, who told her that she had a severe indigestion and I believe advised her to go home. I told her that I thought the same as the physician who saw her before. I gave her some simple remedy to stimulate digestion. Her pulse was perfectly good. The heart sounds were normal, the lungs normal. She had slight nausea. I was called to see her again late in the evening, and found that the pain had increased considerably. I gave a small subcutaneous injection of morphia, which gave her a comparatively comfortable night. The pain, by the way, came on more or less in paroxysms; it was not continuous. She would say, "Now the pain is coming." She showed a good many nervous symptoms. I thought at the time she was a little hysterical. On the following morning when I went to see her she was quite comfortable. Her pulse was not as good, a little irregular, and soon after I left the house she said to her daughter, "that pain is coming back," and fell over dead. In other words, she died almost forty-eight hours after the distress began. Dr. Councilman made the autopsy, and found a rupture of the heart. The pericardium was enormously distended with blood. The rupture was rather large, much more than a pin-hole, and not very tortuous, pretty direct through the wall, near the apex of the left ventricle; so it seems as though there must have been quite a good deal of effusion even at the time she made this railway journey.

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[1] See page 62 of the Journal.

Dr. Tanner: This gentleman, after the morning of the collapse any time up to the sixth or seventh day, was able to get up and walk around, and would have done so if I had allowed him. I found in looking up gunshot injuries that they claim cases of incised wounds of the heart with permanent recovery — not very deep wounds. I have seen one other case in which I was quite positive of rupture of the heart, but could not get an autopsy. This man complained a good deal of difficulty in breathing and precordial pain. I signed the death-certificate, rheumatism of the heart.

Dr. E. E. Jack read a paper on

OPHTHALMOPLEGIA EXTERNA, TOTAL, BILATERAL.[3]

Dr. Webber: The case has been so fully and well reported that there is not much to add. I have seen only one or two cases of nuclear origin, and the particulars are not in my mind with sufficient distinctness to report them. I have seen quite a number of cases where there was evidently a tumor pressing on the nerves and affecting only or chiefly the nerves of the eye — one especially in a lady who had had a cancer removed from her breast, and the only other nerves affected were the sensory and motor branches of the fifth; that was a unilateral case. I was in hopes to have an autopsy. It was promised, but the son-in-law was a doctor and objected, as he said it was only curiosity that led me to wish an autopsy. I have been very much interested in the paper, and I wish I could add more to the subject.

Dr. Jack: I have nothing to add except this: the involvement of the facial, the trigeminus, etc., is simply due to extension of the process taking in the nuclei farther down.

AMERICAN SURGICAL ASSOCIATION.

New York, May 28, 29 and 30, 1895.

(Continued from No. 2, p. 47.)

WEDNESDAY.

Dr. Pilcher, of Brooklyn, opened the discussion on Dr. White's paper, saying that since 1893 it has been demonstrated that after removal of the testicles in aged men a rapid disappearance of prostatic overgrowth takes place in many instances, although this desirable result does not always follow. He said, referring to obstructive prostatic enlargement, that it was only such enlargements as produce obstruction to the flow of urine that become the objects of surgical attention. Glandular elements may preponderate in the enlargement, and muscle fibre is the chief element, although, in most frequently occurring enlargements, glandular, muscular and fibrous elements all enter. The reaction of castration in various pathological conditions is very different, and the sudden obstructions due to congestive accidents, of course, do not call for castration. If the enlargement is due to fibrous hyperplasia, one would expect comparatively little effect upon the size of the altered prostate from the removal of the testicle. The speaker referred at considerable length to two cases of double orcheotomy, the one for prostatic hypertrophy in a man seventy-four years of age, and the other for chronic orchitis in a man sixty-seven years of age. The first case had had symptoms of prostatic obstruction for twenty years, but had never used a catheter. He was first seen in January, 1895, for temporary complete retention. The bladder was distended to a level four inches above the pubes, and rectal touch demonstrated a greatly enlarged prostate. Both testicles were removed. While the patient was being anesthetized, attempts were made to introduce various catheters, but without success. Primary union took place after the operation, and on the sixth day following a catheter was passed with ease, and 32 ounces of urine were voided. The patient's general health was greatly bettered, and he became able to pass spontaneously about an ounce of urine at a time. Recent rectal examination showed that the apparent size of the prostate is the same as in January last.

The second patient had suffered for fourteen years from anal neuralgia. When a young man he had had double hydrocele, which was cured after tapping. Both testicles were extirpated under chloroform, and as the effect of the anesthetic wore off violent delirium manifested itself. The temperature and pulse rose steadily until the sixth day when they were respectively 102.5° and 145 per minute. The patient died from exhaustion on the sixth day, although primary healing of the wound had taken place.

Dr. Arpad G. Gerster, of New York, in the absence of Dr. Roswell Park, continued the discussion, emphasizing the importance of the subject and saying that every fair-minded man should use every opportunity he had to learn more about it. Dr. Gerster's experience was limited to three operations, in one of which — a man seventy-five years of age, fairly well preserved, with a very large prostate, which had been giving trouble for ten years — the result was unfavorable. The other two cases had passed beyond the speaker's observation, and he was unable to state what became of them. In the first case the condition became so desperate that it was demanded that operative measures be taken for relief, and double castration was suggested. This was done with very little loss of blood, and the patient made a good recovery. A copious discharge from the urethra followed, however, and in the urine was found considerable blood, this having apparently flowed from the prostate into the bladder. The patient's condition gradually deteriorated, and he was taken to the operating-room, under the suspicion that there might be an abscess of the prostate, which proved to be the case. Death ensued on the eleventh day after operation, this case showing that the operation is not as free from danger as some think. Many objections to this operation are raised by men who have never given it a trial, but it is the duty of all surgeons to investigate the subject.

Two other cases occurred during the speaker's service at the hospital, in which the operations were carried out by another surgeon. In one of these patients there was an enormously enlarged middle lobe of the prostate, and the man was in constant agony; but two weeks after operation he was able to void his urine without the use of the catheter. One other case was seen in consultation with Dr. Lillienthal. In this patient the testicles had been removed ten years previous, and after the operation he was able to pass his urine without difficulty.

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[3] See page 64 of the Journal.

Dr. W. H. Carmalt, of New Haven, discussed the paper, saying that an adenoma was primarily the preliminary stage of carcinoma, and that in conditions of hyperplasia and affections of the prostate causing obstruction, he thought it might be well perhaps to obviate the possibility of occurrence of carcinoma by means of castration.

Dr. Alexander, of New York, differed from Dr. Gerster as to the advisability of a surgeon speaking about an operation with which he had had no experience. He referred to the cases reported by Dr. White and Dr. Griffith, and stated that the recovery in Dr. Griffith's case, which was published sixteen days after operation, had not been sufficiently tested by time to be called a complete success. He considered that the process was going on in the prostate at the time of the operation, and was not altogether a result of the operation. The second point made by the speaker was that the second of the vesical muscles at the time of the operation seemed to be overlooked; and he stated that he considered the results obtained within a few days after an operation were due largely to the aseptic catheterization by the surgeon and not to the operation.

Dr. Alexander criticized the way in which cases are reported, and considered that the facts connected with these operations are not given with sufficient fulness by surgeons at present. He stated that he considered the operation a physiological experiment as yet.

Dr. John H. Packard, of Philadelphia, said there seemed to be one point entirely overlooked in the discussion, namely, the stage of the disease at which the operation should be performed. He referred to the case of a very intelligent German, about seventy years of age, who had kept a memorandum of his control of the bladder for every day for four months. Prior to the operation the patient could not hold his water for more than an hour, but one week afterward he held it for three hours, which rapidly increased to four and five hours.

Dr. Theodore A. McGraw, of Detroit, was very much impressed with the results which had been secured by Dr. White from this operation. He spoke of one case which he had seen with Dr. Walker, of Detroit, in which ten days after operation the patient was able to pass a large stream. The speaker had operated on an old man, who immediately thereafter seemed to be somewhat relieved, but the trouble returned and the patient died. As to the question of whether or not taking out one testicle would have any effect, the speaker alluded to the case of an ex-Governor of Michigan, who was under his care, in whom no effect whatever was produced upon the prostate after one testicle had sloughed completely away.

Dr. Brown showed an instrument which he had devised for perineal section.

Dr. F. H. Gerrish, of Portland, Maine, read a paper entitled

THE RELATIONS OF THE LYMPHATIC SYSTEM TO THE VARIOUS REGIONS.

There is probably no chapter in anatomy less understood by the average medical man than that devoted to the lymphatic system. The lymphatics are less regular in their course and relations than any other part of the vascular system.

Diagrams were presented to show the usual relations between each group of those glands which are accessible to operative procedure. Distinction was made between the parotid and internal maxillary nodes, often included under the former name, the one being situated upon and in the parotid salivary gland, the other on the side of the pharynx just behind the buccinator muscle.

The next paper, by **Dr. John Homans**, of Boston,

THE FEMALE GENITAL ORGANS, INCLUDING THE UTERUS AND VULVA,

was read by title.

The title of the next article was

CANCER OF THE LIP, TONGUE, FLOOR OF MOUTH, AND PHARYNX,

which was read by **Dr. P. S. Conner**, of Cincinnati, O.

Carcinoma is for a time local, its generalization being practically altogether through the lymphatics. Recurrence in the immediate vicinity of the primary growth shows incomplete removal of such growth; reappearance in the neighboring glands being evidence of failure to discover and take away such glands already infected. No operation completely fulfils the indication which does not result in the total extirpation of the disease; but when from the situation and extension of the cancer, it cannot be thoroughly cut away, that procedure is preferable which, while preserving life for the time being, secures the longest immunity from secondary growths, external and internal.

Cancer of the lip usually affects more or less widely the free border, with some infiltration of the underlying tissues. As long as its locality is restricted, it can be safely taken away by means of the ordinary excision of a V-shaped mass, all the diseased area being removed. In most cases, however, the disease is not thus limited, as in a few months after the initial lesion, infiltration of one or more glands under the jaw has generally occurred. To this secondary lymphatic disease is due the great majority of the 60 per cent. or 65 per cent. of failures to effect a cure. In all cases in which any enlarged gland, no matter how slight, can be felt, it should be cut down upon and removed.

Cancer of the tongue is seen in about one-tenth of all the subjects of carcinoma. There is usually glandular enlargement, which develops early. The final results of operations have been far from encouraging, as mortality is great and recurrence very constant.

Diagnosis once established, free excision of the affected area should be made without delay, that glandular involvement may, if possible, be prevented. Even if the malignancy of the ulcer or the tumor is questionable, but little time should be spent in removing the doubt, for it is better that occasionally a tubercular or syphilitic tongue should be unnecessarily operated upon than that a carcinoma should be allowed to widely extend its growth. The best method of operating must depend upon the circumstances of the individual case. When the growth is recent and is located in the free portion of the tongue, ablation of that part should be made with the knife or, better, the scissors. Any operation through the mouth, unless done very early and for a limited disease of the tip or possibly of the side of the tongue, should be followed by an exploratory incision in the submaxillary region and the extirpation of discovered glands. In order, however, to materially increase the percentage of recoveries, it is necessary in this region to operate more thoroughly, more widely; and it is through the neck and the floor of the mouth that we must reach the tongue, as along such route only is it practicable to reach all the affected tissues. Hemorrhage can be reduced to the least amount by ligation of all the vessels as they are reached, especially the linguals; or by the use of hemostatic forceps and ligations in the wound. The advantages of the extra-buccal operation are (1) the more perfect drainage that it secures, and (2) the greater facilities that it offers for maintaining approximately aseptic conditions of the wound.

Cancer of the pharynx, other than by direct extension from contiguous parts, is rare, and affects almost solely the soft palate or the tonsils. When secondary and associated with grave disease of the tongue or cheek, any operative interference, as a rule, is useless and can only hurry the necessarily fatal termination of the case. If primary and confined, however, it can be readily removed by scissors or cautery, and if this is early and widely done, such extirpation is not unlikely to secure exemption from recurrence.

THE OPERATIVE TREATMENT OF CANCER OF THE MALE GENITALS,

was the title of the following paper, read by **DR. HUNTER McGUIRE**, of Richmond, Va.

Cancer of the penis will be found in about every 100 cases of cancer. The disease ordinarily makes its appearance after middle life, appearing in men between forty-five and seventy years of age. Its first attack is upon the inner surface of the prepuce or glans penis, more often the latter. Its beginning is as a small vesicle or nodule, which soon breaks down, leaving an ulcer with densely hard base and edges. Involvement of the glands is probably more frequent than usually believed; Kaufmann found it to exist in 40 cases out of 48. The same writer gives twenty-two months as the average duration of life in cases not operated on. As soon as a diagnosis is made of the disease, which is usually epithelioma, radical measures should be adopted. Syphilis is the only disease with which it may be confused. The appearance of the ulcer, which is covered with dead epithelium and has a very hard base, the induration extending some distance around, but intense, and with an ill-defined limit, will generally tell the character of the malady; if not, the microscope will determine. If phimosis exists, as it frequently does — in the reader's experience often producing the cancer — the prepuce should be split, to allow of complete examination. The prognosis is good in early operation; but after some delay, especially if iodide and mercury are used constitutionally, the outlook is discouraging, and after still further delay, and glandular infection, is almost if not quite hopeless. It is not at all advisable to amputate the penis by galvanic cautery, or by the ecraseur.

In cancer of the scrotum, there must be a radical operation, removing by the knife all the diseased parts. If one testicle is affected, it, too, must be sacrificed, and if the glands in the groin are enlarged and indurated, they should also be extirpated. If the disease recurs, there should be a second, or even a third operation.

In cancer of the testicle the medullary form is the most common. Two years is about the average duration of the disease. The following points of diagnostic value are given by Jacobson: (1) Continual progressing, solid enlargements without inflammation; (2) unequal consistence of the swelling at different parts; (3) absence of translucency; (4) tendency of scrotal veins to become enlarged; (5) increasing aches and painfulness; (6) in doubtful cases antiseptic tapping or exploratory incisions, preferably the latter; (7) enlargement of the cord and *a fortiori* that of the lumbar glands.

In these days of modern surgery, the danger to life in castration for cancer is very slight. Permanent cures are uncertain. Still, life is lengthened, and the patient's comfort increased. When the disease has progressed to such an extent that secondary masses can be demonstrated in the iliac fossa, or lumbar region, and especially if cachexia is marked, the operation should not be performed, no matter how urgently the patient may demand it.

The symptoms which should lead the surgeon to suspect hard cancer of the prostate, and to distinguish it from prostatic hypertrophy may be stated briefly: (1) There is great frequency and difficulty of urination, and the urgency of call is more imperious than can be accounted for by the size of the prostate or amount of residual urine. (2) It is difficult, often impossible, to introduce a metal sound into the bladder through the warped urethra. (3) There is continuous pain in the pelvis, often extending to the thighs and legs. (4) Blood sometimes precedes or follows the stream of urine. (5) The prostate is enlarged, as hard as a stone; and the finger in the rectum can often detect induration of one or both vesiculæ-seminales.

Soft cancer, however, is not so easily diagnosed; and it has in most cases progressed very far before its existence is suspected. The first symptoms are rectal, the patient having frequent calls to empty the rectum, tenesmus, blood and mucus in operations; secondarily, there is frequency of micturition, incontinence or retention. Rectal examination demonstrates a large, soft, elastic tumor, springing from the prostate, pushing backward into the rectum, eventually making its way into that organ and filling the pelvis. The bladder should, if necessary, be regularly emptied by a catheter in cases of complete or partial retention, the rectum should be unloaded by enemata, and the stools kept soft by laxatives given by the mouth. In some cases, where the rectal symptoms are distressing, the formation of an artificial anus by colotomy may be done with advantage.

As yet no radical operation for the permanent cure of cancer of the prostate has been devised. Suprapubic cystotomy and drainage give physiological rest to the bladder and very great relief in these cases. After the bladder has been opened by the simple suprapubic incision, there can be a thorough examination of the diseased prostate by the finger introduced into the bladder; or a small electric light may be introduced through the suprapubic opening to permit of complete inspection of the vesical surface of the growth.

The author mentioned a case of suprapubic artificial urethra for hard cancer of the prostate, where the patient wore for a year a silver plug to prevent the tract from closing. When the urine had accumulated in the bladder, the plug was withdrawn and a soft gum catheter introduced. After the water had all escaped, the catheter was removed and the plug replaced. In this way nearly all the pain and frequency of urination was avoided. Pain in the pelvis and legs and other symptoms of cancer continued until the patient's death.

CLINIC AT THE NEW YORK HOSPITAL.

Dr. Arpad G. Gerster reported a case of deformity of the fibula, which was very much reduced by operation, and in which the fibula had been as thick as the tibia should be. His second case was that of a young girl in whom tumor of the brain was diagnosed, a gold plate being inserted after operation, and worn for two and three-quarters years. At the end of this period the symptoms returned, the skull was again opened, and when the plate was removed, a secondary growth, sarcoma, was found. The third case was that of a young man on whom castration was done, in addition to the extirpation of the entire cord and seminal glands. The patient recovered and was soon out of bed.

Dr. Weir presented several cases, one of which was a patient in whom the deformity of sunken nose had been admirably corrected. The second was a case of compound fracture of the skull, in which trephining was done and a silver plate inserted. The third and fourth were young men with tubercular testes on both sides, in each of whom an artificial testis was inserted. The fifth case was an old man who had suffered from prostatic trouble, which was somewhat relieved by operation. The sixth showed the good results of operative interference in a case of dislocation of the elbow; the seventh, a case of fracture of the external condyle, and the eighth, a boy who complained that one of his testicles had not descended, also showed improvement.

Dr. Weir read the notes of a case, reported by Dr. Hartley, of a woman with a sarcoma springing from the posterior wall of the stomach. The patient was operated on, and did very well.

Dr. Abbe produced several patients: one of general peritonitis, in whom recovery was secured upon operation; another, of jugular thrombosis, upon whom operation had been done seven weeks before, followed by uninterrupted improvement; several cases of tumor of the brain, one of esophageal stricture, and one of tumor of the kidney, all of whom were much benefited.

Dr. Arpad G. Gerster said he wished to show just one more case, in which a very extensive extirpation of the rectum was performed on November 18, 1884. The man had an artificial anus, and the case is interesting from the fact that the speaker had to perform plastic operations in order to open up the anus of each of the patient's first two children, although the anus of a third child was normal.

Dr. Homans here stated that he had had a case very similar to that of Dr. Gerster's.

Dr. Wm. T. Bull produced a case in which gastroenterostomy was done for the relief of typical symptoms of pyloric obstruction, four years and nine months ago, with good results. Another of his cases illustrated very beautifully what may be accomplished by skin grafting; and the speaker mentioned a third case, which he showed only by photograph, in which skin grafting had also been successful.

Dr. Murray showed a case of tumor of the tongue, and also a case of disarticulation of the hip-joint for carcinoma, both of which were much benefited by operation. He also showed a specimen from an aneurism from the Circle of Willis, which he had recently removed from a man thirty years of age. This he considered due to an injury received from a fall.

(To be continued.)

Recent Literature.

Aseptic Surgical Technique. With especial reference to Gynæcological Operations, together with Notes on the Technique employed in Certain Supplementary Procedures. By **Hunter Robb, M.D.**, Associate in Gynæcology, Johns Hopkins University; Professor of Gynæcology, Western Reserve University, Cleveland, O. Illustrated. Philadelphia: J. B. Lippincott Company. 1894.

This is a book which places before us some of the details of the improvements in aseptic work with a special reference to abdominal and gynecological surgery. A visit to the Johns Hopkins Hospital rarely fails to add to one's knowledge of aseptic surgery, and this work supplies just the details that a surgeon wants when he is looking up this line of work.

The object of the book is to connect laboratory bacteriology with practical surgery, and no one who reads the book can help being impressed with the attention to minute detail which makes one of the most important principles of perfect asepsis. It is well printed, illustrated and bound, and is a book which has been prepared with more than ordinary care and well fulfils its purpose.

A Treatise on Appendicitis. By **George R. Fowler, M.D.**, Examiner in Surgery, Medical Examining Board of the Regents of the University of the State of New York; Surgeon to St. Mary's Hospital and to the Methodist Episcopal Hospital; Consulting Surgeon to the Relief (E. D.) Hospital and to the Norwegian Hospital. Philadelphia: J. B. Lippincott Company. 1894.

This book of 181 pages is a "revised reprint of a series of articles which appeared in the *Annals of Surgery* under the title of 'Observations upon Appendicitis.'" The author has had exceptional opportunities for studying the disease, and the book is the result of a broad clinical experience combined with accurate research. The mooted points are ably put, and a great deal of care is taken to fairly present the subject.

The operative technique is fully described and leaves but little to be desired. It may well serve as a model of clearness and conciseness of description.

The work is a timely one; while it cannot serve as a guide to any one in the treatment of appendicitis, yet it presents the subject in an all-round manner. The records of illustrative cases add greatly to the value of the book and serve to emphasize the important points that the author believes should be brought out.

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MALARIA.

SINCE the publication of Lavaran in 1880, describing a parasite in the blood in cases of malaria, which he regarded as the cause of the disease, a great number of articles on the subject have appeared. The most comprehensive article which has been written on the subject is the recent monograph of Thayer and Hewitson in the "Johns Hopkins Hospital Reports," previously referred to in an editorial, July 4th. The authors have carefully studied 616 cases of malaria which were treated in the wards and in the medical out-patient department of the Johns Hopkins Hospital between June 14, 1889, and August 1, 1894.

In the first part of the paper there is a review of the enormous literature on malaria which has appeared since the recognition of its parasitic nature by Lavaran, together with some of the more important literature preceding this period. In all, 359 articles are referred to.

In the articles which have appeared since 1880, the original observations of Lavaran have been comfirmed and many new facts discovered which have cleared up many of the uncertainties of this disease.

Up to a few years past malaria was one of the most obscure diseases, and as such it formed a convenient cloak to cover ignorance. With some practitioners it still remains a sort of medical cesspool into which cases of lack of occupation, neurasthenia, incipient phthisis and typhoid fever are indiscriminately thrown. It was supposed, unlike other diseases, to have no definite symptomatology or pathology.

By the term malaria we understand a definite infectious disease due to a definite cause. Unlike other infectious diseases, it appears under different forms, which are in many respects similar to one another. Each of these forms is produced by a definite parasite, and there may be mixed forms in which the parasites of one or more different forms of the disease may be present at the same time.

Malaria may be divided into three forms, tertian fever, quartan fever and estivo-autumnal fever. In each of these a parasite is found which goes through its cycle of development within the red blood-corpuscles. In tertain and quartan fever the cycle can be determined with exactness and the paroxysms of fever coincide with a certain stage in the development of the organism. Tertian fever is produced by an organism which begins its development as an ameboid organism within a red corpuscle. It gradually increases in size, destroys its host, becomes pigmented and divides into a number of small forms which enter into other corpuscles and again pass through their cycle. The paroxysm of fever coincides with the segmentation and is probably due to toxic substances which are set free by the dividing parasite. The probability that such toxic substances are produced, is shown by certain anatomical changes in the organs, similar to those found in other infectious diseases, and which may be caused by chemical toxic substances obtained by filtration of cultures.

There may be two or more crops of the same organism present in the blood at the same time, each of which completes its development in forty-eight hours with a paroxysm of fever coinciding with segmentation. In this way a quotidian fever may be caused. It is the same condition as two crops of peas of different time of planting growing in the same soil. The quartan fever is produced by an organism similar in its general features, which completes its cycle of development in seventy-two hours. Here, again, there may be several crops of the same organism present in the blood at the same time. There may be two crops producing a double tertian or three crops producing a daily paroxysm. In the estivo-autumnal form the parasite passes through a cycle of development the exact length of which has not been determined; it probably varies from twenty-four hours or under to forty-eight hours or more. The stages of the development of this organism cannot be so easily determined for they do not ordinarily take place in the peripheral circulation, the main seat of the infection being in the spleen, bone marrow and other internal organs.

"Infection with this form of organism is associated with fevers varying greatly in their manifestations. There may be quotidian or tertian intermittent fever, or, more commonly, more or less continuous fever with irregular remissions. The individual paroxysms last on an average about twenty hours. The irregularities in temperature depend probably upon variations in the length of the cycle of development of the parasite, or upon infection with multiple groups of organisms." There may be mixed infections, the patient having at the same time the organisms of tertian and quartan or either of these forms with the estivo-autumnal.

In addition to the differences in the periods of development there are some morphological differences in the different forms. The organism is larger in the tertian than in the quartan and more indistinct and there is also a difference in the number of segments into which it breaks up. It is probable that the organisms of each of these forms of malaria represent distinct species. The authors have never seen anything to make them believe that under any conditions these various forms may pass into one another, as a quartan organism becomes a tertian, etc. In each of the organisms in addition to the typical forms which develop within the red copuscles, other forms which probably represent either degenerative or unusual forms of development are met with. In all, there may be found an organism with long, actively-moving flagallæ free in the blood.

It has been suggested that this may represent the form of the organism when leading a saprophytic existence. That it may be a degenerative condition of the organism is shown by the fact that this form is almost the only one which is attacked and destroyed by the leucocytes.

The estivo-autumnal fever is further separated from the others by the presence of a pigmented crescentic organism. This is found in a large number of cases. It has never been possible to follow exactly the various stages of development of these extra corpuscular forms of the parasites.

It is to be regretted that the authors have not been able to include malarial hematuria in their observations. It is very possible that this disease is due either to a still different species of the malarial organism or to an entirely different organism. It is very improbable that certain manifestations of a disease should be confined to certain localities, as seems to be the case with malarial hematuria. It is greatly to be hoped that the authors will complete their work by the investigation of this disease which the proximity of Baltimore to one of the habitats of the disease in Virginia should make possible.

It has also been clearly established that quinine is most efficacious when given just before or at the time of the paroxysm. The segmenting forms and the young brood are much more susceptible to its action than the older forms completely enclosed in corpuscles. When two broods of the tertian organism are in the blood, giving rise to a quotidian fever, it has been found possible by giving quinine at the time of a paroxysm to kill one brood leaving the other intact.

◆

PARTIAL AMPUTATION OF THE FOOT.

At the meeting of the Philadelphia Academy of Surgery on May 6th, Dr. H. R. Wharton reported two cases of partial amputation of the foot. One was that of a railroad employé on whom a Syme's amputation had been performed three years ago. The man wore an artificial apparatus, had a good end-bearing stump, was actively employed as a switch-tender, and was able to run. The second case was a man in whom a simultaneous amputation of the leg, and partial amputation of the foot were done with excellent result, the patient being able to walk five or six miles a day without trouble.

It will be remembered that in our editorial of November 29, 1894, on "Primary Amputations in Civil Life," the ground was taken that the present prevailing opinion that amputation at the so-called point of election was preferable to partial amputation of the foot was founded on wrong principles. An end-bearing stump has always been preferable where a patient could not afford an expensive artificial leg, and of late years the best makers of prothetic apparatus have found the end-bearing stump preferable for the purpose of fitting a serviceable artificial leg.

In commenting on his cases Dr. Wharton remarked that he had not seen a man come into the hospital with a crushed foot who would not prefer a partial amputation to an amputation at the point of election, and that he had seen several cases after Chopart's amputation where the results had been very good and the patients could run or walk without trouble.

We are glad to see that the opinions expressed in our editorial are being confirmed by so reliable an authority as Dr. Wharton, and are led to hope that the present craze for amputation at the point of election will be of short duration.

◆

CONCERNING VIVISECTION.

The statement made by Prof. William Townsend Porter in the *Boston Transcript* of last Saturday, in answer to the numerous letters which have recently appeared in that and other papers seeking to stir up a popular agitation against experimentation upon living animals, is a fair, just and impartial presentation of the subject. It is hoped that the temperate spirit, and consistent logic of this statement will prove an example to many of the writers for whom it is especially intended.

The justification of the results attained is so complete, and the cruelty so slight in comparison, as to leave no possible ground for intelligent opposition to the work as it is done in the Harvard Medical School and in the other physiological laboratories of the country. Instead of the horrible picture which exists in the imagination of the antivivisectionist, of a being who finds pleasure in torturing animals in order to ascertain how much pain they can be made to suffer, we see in the physiologist or therapeutician a man who minimizes in every way the suffering of the animals, who works for small material reward, works early and late and self-forgetfully, laying the broad foundations of practical medicine.

From a purely practical point of view the methods of study which have given us the antitoxins of diphtheria and tetanus, and made possible cerebral localization, are of inestimable value to mankind. So great has been the progress made on these lines in recent years, that we might fairly say that if the method of experimentation on animals were to stop, we would lose the means of investigation which have in the past been of the highest value, and give promise of the greatest alleviation of human suffering in the future.

◆

MEDICAL NOTES.

Royal College of Surgeons. — The following five members of the Council have been elected: Mr. Willett, Mr. Treves, Mr. Butlin, Mr. Alfred Cooper, Dr. Ward Cousins.

Mr. T. Grigor Brodie, M.D., Lond., has been appointed lecturer on physiology at St. Thomas's Hospital, in the vacancy caused by the resignation of Professor Sherrington, F.R.S.

The Pittsburgh Eye and Ear Hospital.— The Eye and Ear Hospital of Pittsburgh, Pa., at No. 945 Penn Avenue, was opened to patients on July 1, 1895. A dispensary is connected with the hospital.

Illness of Dr. Ruffer. — Dr. Ruffer, director of the British Institute of Preventive Medicine, has contracted a severe attack of diphtheria in the course of his investigations. He was at once treated by antitoxin serum with satisfactory results.

A Chart of the Sympathetic Nervous System.— We have received a life-size chart of the sympathetic nervous system, made up from personal dissections by Dr. Byron Robinson, of Chicago, which have extended over a period of five years. The chart is doubtless the most accurate representation we yet have of the extremely intricate and, as yet, little understood sympathetic system.

The Increase of Rabies.— If the published returns are to be regarded as accurate, rabies is on the increase. In the first twenty-two weeks of 1892 there were only 11 cases reported, and in the corresponding period of the following year there were 37 animals attacked. In the first half of 1894 the number of cases was 80, while this year up to the end of last month no fewer than 373 cases have been reported. This last number is enormous, and some explanation should be forthcoming to show how the increase has occurred. Quite possibly a new method of classifying the cases has been adopted, and this may have led to the returns reaching the unprecedented total above mentioned. But whatever the explanation may be, it is of interest to note in this connection the minimum rate to which the deaths from hydrophobia have fallen.

An English Medical Work in Greek. — It seems that Dr. Galabin's work on "Diseases of Women" has been translated into Greek by Dr. Luke, of Athens. The translation of the English names has given rise to some rather curious results. Γαλαβινος and Βαρνες are easily recognized, but Σπένςερ Ουελλς is a trifle cryptographic, and one might well have a little hesitation with regard to Ούιλσων Φώξ. As for Σύδναμ, it requires a certain effort to recognize the English Hippocrates, whilst the personality of Πλαεῦφερ must be a matter of guesswork. The name of Tait seems to have given a great deal of trouble to the translator; sometimes it is given as Λωσον Τείτ, occasionally the Birmingham surgeon is designated more familiarly as ὁ Ταίιτ. — *Medical Press and Circular.*

A Carthaginian Truss.— Poncet, of Cluny, in the *Progrès Médical* of June 1st, gives a description of a statuette found in Tunis representing a divinity of the Egyptian mythology, and dating from about 900 B. C. The medical interest of this statuette, which is believed to be of Carthaginian origin, consists in the fact that the statuette represents the god as wearing an unmistakable truss for double inguinal hernia, a belt with pads obliquely placed in the right position, and connected by an arch across the pubes. According to Poncet this carved Carthaginian truss represents a perfect apparatus for the restraint of inguinal hernia. The statuette also shows, according to Poncet, a double femoral hernia, a double scrotal omental hernia, and a very careful representation of the unfolding of the urethra which is seen in cases of voluminous scrotal herniæ. As to the reason for the representation of the god wearing a truss, Poncet thinks that the statuette may have been an offering to the god by a grateful worshipper who had been cured of his herniæ. A writer in *La Médecine Moderne* suggests a more probable explanation, founded on the modern use of casts of classical statues which are displayed in show windows wearing the apparatus of instrument makers. This explanation is that the statuette was used by a Phœnician surgical-appliance maker to advertise his wares. The bust of the young Augustus wearing lung protectors is so common a sight in the show windows of this city as to lend great probability to this conjecture.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, July 17, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 44, scarlet fever 23, measles 40, typhoid fever 17.

No Boylston Prize Awarded.— The Boylston Medical Committee of the Harvard Medical School awarded no prize this year.

The Christian Endeavor Societies in Boston. — During last week the streets and public places of Boston were crowded with such a throng of visitors as hardly ever before. The army that tented on the Common by day and in the hotels and houses of the city by night was made up of a class of Christians who so consistently "endeavored" to respect the rights of others, and who took so serious and earnest an interest in the business of their meetings and in the historic and artistic side of the city they visited, that their visit will be long remembered by the citizens of Boston as a pleasant experience. There are not many organizations of such great size which could visit a city *en* *masse* and leave so pleasant an impression of their visit. Their meetings also were marked by a calm and serious spirit, and not marred by the hysterical extremes of revivalism.

VETO OF THE APPROPRIATION FOR A BRANCH HOSPITAL.— Mayor Curtis, in cutting down the annual appropriation bill, has vetoed the appropriation of $30,000 which was proposed for the establishment of a branch of the Boston City Hospital in East Boston. His reasons for this action are excellent, and are based upon the report on this subject made by the trustees of the Boston City Hospital two years ago, the opinions of nearly all the physicians of outlying districts who were consulted, and the opinions of the medical staff of the Boston City Hospital. The report of the trustees, which thoroughly covers the ground, states the objections to the establishment of branch hospitals in detail. In the main these objections are, first, that Boston, which has eighteen hospitals, is already well provided; second, that the total cost of building and maintaining such hospitals would be enormous; and, third, that their management from one centre being impracticable, the problem of administration would be extremely difficult. The mayor argues that if a branch hospital were established in one section of the city, it would be unfair to refuse the demands of other sections for the same accommodation, which, as has been stated above, would impose too great a burden upon the city. A full abstract of the report of the trustees may be found in an editorial article in the JOURNAL of January 5, 1893, under the heading of "Hospital Facilities for Large Cities."

THE STAMFORD MILKMAN ESCAPES TRIAL. — The suit against the milkman, who was arrested on the charge of manslaughter in selling the people of Stamford, Conn., milk from cans washed in polluted water and thus causing a severe epidemic of typhoid fever, has been dropped.

◆

Miscellany.

THE MECCAN PILGRIMAGE.

THE Meccan pilgrims are now returning at a critical and momentous period. The *British Medical Journal* is informed by letter from an authoritative source "that up to June 19th seven ships with about six thousands pilgrims had arrived at Tor, and on two of them there were cases of cholera followed by death. At the time the despatch boat left Tor on June 19th only one of the cases had been confirmed by bacteriological examination. All the vessels arriving at Tor have it stated on their bills of health that there is a good deal of cholera at Mecca. Fifteen days' quarantine is imposed on all pilgrim ships arriving at Tor from Djeddah, and all passing the Canal will be sent through in quarantine. The Egyptian pilgrims, after passing their fifteen days in one encampment at Tor, will be required to undergo another period of three days' observation at that place in a new camp before they will be allowed to land at Suez."

It is most ardently to be hoped that the yearly pilgrimage to Mecca, sanctified only by custom and the supposed demands of religion, may soon become a thing of the past. Year after year the same ghastly rites are performed, and the carcases of the slaughtened animals are left to decay on the spot where they were sacrificed. Nevertheless, owing to the strictly enforced sanitary legislation, there was comparatively little actual disease last year; and apparently, under the present strict quarantine regulations, there will also be but little this year. A more difficult task in prophylactic medicine could hardly be conceived than this; that the various health boards succeed so admirably is a striking proof of their efficacy.

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FATAL CASE OF TRAUMATIC ANEURISM OF ABERRANT RIGHT SUBCLAVIAN ARTERY.

PYE SMITH reports in the *Quarterly Medical Journal* for April, 1895, the case of a man, aged thirty, who was admitted to the Sheffield Public Hospital, having fallen on his back from a height of twenty-eight feet.

When brought to the hospital he was in collapse, and appeared to be seriously injured. He had cough, and sharp cutting pain in the upper part of his chest and back. Deglutition was also painful. No fracture, wound or bruise were discovered, and there was no paralysis. On auscultation the respiratory sounds were almost entirely absent over the left chest. On the right side the sounds were exaggerated. There was slight bloody expectoration. The diagnosis was made of occlusion of the left primary bronchus, probably by blood, as no evidence was found of swallowing or inhalation of any solid substance. Pressure from a hematoma was also suggested.

For two or three days the man's condition improved, and more air was found to enter the left chest, as evidenced by increased respiratory sounds. Ten days after admission cough and dyspnea increased; and eighteen days after admission the dyspnea became very severe, and there was marked dysphagia. Very little air now entered the right chest. There was no pulse to be felt in the right radial, temporal or carotid. An attempt to use the laryngoscope brought on an attack of dyspnea so severe that tracheotomy was performed, and in passing the finger downward into the trachea it was found to be compressed from behind. On restoring the lumen of the trachea by dilatation with long curved forceps, blood-clots were expectorated, and breathing became somewhat freer. A piece of large, thick india-rubber tubing was passed down into the trachea and tied in. Breathing now became moderately easy, but swallowing was still difficult. The patient sank, and died about twenty-four hours after this procedure, his death being preceded by the vomiting of about half a pint of blood on two occasions.

At the autopsy there was found a traumatic aneurism of the posterior mediastinum, which had ruptured into the esophagus. This aneurism was due to the rupture of an aberrant right subclavian artery. The right carotid artery was seen crossing the trachea obliquely a short distance below the tracheotomy wound, and flattened by pressure forwards of the trachea. This vessel was found to spring directly from the aorta, the innominate being absent, while the right subclavian artery was found to arise from the aortic arch beyond the left subclavian, and crossing between the spine and the esophagus at the level of the third dorsal vertebra, at which point there was a traumatic aneurism, about two and one-half inches in diameter. The openings in the artery and the esophagus were evident.

Although this case is peculiar, and probably unique, the abnormality from which it arose is described by Quain as one of the commonest varieties in the origin of the great vessels from the aortic arch, arising embryologically from the obliteration of part of the right fourth branchial arch, and the persistence of the right aortic root.

The diagnosis was obscured by the fact that it was not until the eighteenth day after admission that the surgeon happened to find the right radial pulse was absent, as in his previous examinations he had happened to feel only the left pulse. After the death of the patient he was informed by the dresser that the right radial pulse had been absent since the patient's admission. The writer thinks that if this fact had been noticed, and followed up by a systematic examination of the other arteries — brachial, subclavian and carotid — something like a correct diagnosis might have been made.

◆

A GOOD FIGHT AGAINST CHOLERA IN SOUTH AMERICA.

THE following editorial from the *New York Times*, gives just credit to the excellent and effective work done by the sanitary authorities in Brazil in stamping out the annual cholera epidemic this year, and at the same time so concise a review of the situation in regard to this disease in South American countries that we transcribe it in full.

South America has been unexpectedly fortunate this year in escaping a destructive epidemic of Asiatic cholera. The disease was present in Brazil and Argentina for about five months, but now appears to have been stamped out with a record, as officially reported, of less than 400 deaths. This is certainly remarkable, in view of the fact that the disease prevailed not only in the large cities of Buenos Ayres, Rio de Janeiro, Rosario, and Montevideo, but also in a considerable district along the course of the Parahyba River, in Brazil, some distance from the coast.

The official reports of our government show that there were 225 cases and 137 deaths in Buenos Ayres from December 1 to March 21; 195 deaths in Rio de Janeiro from December 1 to May 18; 28 cases and 1 death in Montevideo during March; 8 cases and 2 deaths in Rosario during the same month, and 120 cases and 38 deaths in several small Brazilian towns during February, March, and April. On May 28 the resident representative of the Marine-Hospital Bureau in Rio de Janeiro reported that there were no longer any cases at the infected points in the interior, that no cases had been reported in the city for some time, and that quarantine against Buenos Ayres and Montevideo had been raised. There is no room for doubt as to the real nature of the disease, for the cholera bacillus was obtained by bacteriological analysis in Rio at a hospital where there were more than 150 fatal cases.

It appears from the reports that the suppression of the incipient epidemic was due to the untiring and intelligent efforts of the sanitary authorities. These officers deserve much credit, for so effective an enforcement of sanitary laws was scarcely to be expected in South American cities, where the sanitarian has much to contend with. A few years ago cholera, introduced at Buenos Ayres from Italy, prevailed throughout the southern part of the continent and caused the deaths of some 30,000 persons.

METEOROLOGICAL RECORD,

For the week ending July 6th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..30	30.10	65	69	61	97	95	96	N.E.	S.W.	3	12	O.	O.	.05
M.. 1	29.92	72	78	66	57	80	68	N.W.	N.	11	5	O.	O.	.05
T.. 2	30.13	64	72	57	55	57	56	N.	S.W.	8	8	C.	C.	
W.. 3	30.16	68	77	58	49	53	51	N.	S.W.	5	11	C.	O.	
T.. 4	29.91	64	71	57	63	100	82	N.	N.E.	5	23	R.	R.	.31
F.. 5	30.03	68	78	59	87	81	84	E.	S.	8	10	O.	O.	.04
S... 6	29.86	69	74	64	87	90	88	S.	S.	19	8	O.	O.	.30
☛														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☛ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 6, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Measles.
New York . .	1,956,000	954	584	36.40	7.70	26.00	4.60	2.40
Chicago . . .	1,600,000	—	—	—	—	—	—	—
Philadelphia .	1,139,457	487	262	32.76	8.61	26.25	4.62	.63
Brooklyn . .	1,043,000	519	323	41.99	5.70	34.39	3.61	.76
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	153	34	9.75	12.35	2.60	3.25	.65
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	—	—	—	—	—	—	—
Cincinnati . .	325,000	118	55	15.30	11.05	10.20	1.30	1.30
Cleveland . .	325,000	95	58	14.70	5.10	13.26	—	—
Pittsburg . .	272,000	98	72	54.06	—	52.02	—	1.02
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	32	13	18.78	18.78	18.78	—	—
Charleston . .	65,165	45	27	20.00	4.44	13.33	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	36	24	52.82	8.34	50.04	—	—
Fall River . .	92,233	—	—	—	—	—	—	—
Lowell . . .	90,613	—	—	—	—	—	—	—
Cambridge . .	79,607	—	—	—	—	—	—	—
Lynn	65,123	24	3	8.32	16.64	—	—	—
Springfield . .	50,284	22	5	18.20	18.20	13.65	—	4.55
Lawrence . .	49,900	13	10	7.69	—	—	—	—
New Bedford .	47,741	20	12	25.00	5.00	20.00	—	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	3	3	66.66	—	—	—	—
Salem	33,155	12	5	8.33	—	8.33	—	—
Haverhill . .	32,925	14	4	21.42	35.70	7.14	—	—
Malden . . .	30,209	7	0	14.28	14.28	—	—	—
Chelsea . . .	29,806	4	2	—	—	—	—	—
Fitchburg . .	29,388	8	0	—	—	—	—	—
Newton . . .	28,837	7	0	14.28	14.28	—	14.28	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,954	9	2	—	11.11	—	—	—
Waltham . .	22,058	5	2	20.00	40.00	—	—	—
Quincy . . .	19,642	1	0	—	—	—	—	—
Pittsfield . .	18,802	3	0	—	—	—	—	—
Everett . . .	16,585	3	0	—	—	—	—	—
Northampton .	16,331	4	1	25.00	—	—	—	—
Newburyport .	14,073	7	1	—	—	—	—	—
Amesbury . .	10,920	3	0	—	—	—	—	—

Deaths reported 2,801; under five years of age 1,541; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 913, consumption 223, acute lung diseases 173, diarrheal diseases 694, diphtheria and croup 93, measles 37, scarlet fever 23, typhoid fever 22, whooping-cough 21, cerebro-spinal meningitis 15, erysipelas 6, small-pox 2.

From typhoid fever Philadelphia 7, Brooklyn and Boston 3 each, Nashville 2, New York, Cleveland, Providence, New Bedford, Malden and Northampton 1 each. From whooping-cough New York 13, Brooklyn 6, Pittsburgh and Haverhill 1 each. From cerebro spinal meningitis New York 6, Charleston and Somerville 2 each, Boston, Lynn, Lawrence, Brockton and Taunton 1 each. From erysipelas New York 3, Brooklyn 2, Boston, Fall River, New Bedford, Malden and Northampton 1 each. From small-pox Philadelphia and Cincinnati 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending June 29th, the death-rate was 16.7. Deaths reported 3,394; acute diseases of the respiratory organs (London) 160, diarrhea 177, measles 140, whooping-cough 59, diphtheria 55, scarlet fever 32, fever 29, small-pox (London) 1.

The death-rates ranged from 9.6 in Brighton to 25.7 in Liverpool; Birmingham 16.2, Bradford 13.8, Croydon 13.2, Gateshead 22.8, Huddersfield 11.5, Hull 15.9, Leeds 15.3, Leicester 11.6, London 16.9, Manchester 19.0, Newcastle-on-Tyne 17.1, Nottingham 12.4, Sheffield 14.3, West Ham 15.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 6, 1895, TO JULY 12, 1895.

Leave of absence for one month, to take effect on or about the 23d instant., is granted Lieut.-Col. Johnson V. D. Middleton, deputy surgeon-general.

Leave of absence for two months, to take effect on or about August 1, 1895, is granted Captain William W. Gray, assistant surgeon.

Captain Reuben L. Robertson, assistant surgeon, resigned July 3, 1895.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 13, 1895.

R. P. Crandall, passed assistant surgeon, detached from the U. S. Receiving-ship "Vermont" and ordered to the New York Navy Yard.

Geo. M. C. Pickrell, passed assistant surgeon, ordered to Washington Hospital.

H. T. Percy, passed assistant surgeon, detached from Naval Hospital, Washington, and to the Navy Yard, Washington, D. C.

APPOINTMENTS.

Dr. Malcolm Storer has been appointed physician to the Department for Diseases of Women at the Boston Dispensary.

Drs. Alfred A. Wheeler and C. Morton Smith have been appointed district physicians.

BOOKS AND PAMPHLETS RECEIVED.

The Relations of Infectious Processes to Mental Disease. By Charles K. Mills, M.D. Reprint. 1894.

Two Cases of Pseudo-Hypertrophic Paralysis in Brothers. By Archibald Church, M.D. Reprint. 1895.

Annual Reports of the Managers and Officers of the State Hospitals of New Jersey for the year ending October 31, 1894.

Report of Seven Cases of Double Castration for Relief of Enlarged Prostate Gland. By H. O. Walker, M.D., Detroit, Mich. Reprint. 1895.

Laboratory of the McLean Hospital, Somerville, Mass. By President G. Stanley Hall, Clark University, Worcester, Mass. Reprint. 1895.

Transactions of the American Association of Obstetricians and Gynecologists, Vol. VII, for the year 1894. Philadelphia: W. J. Dornan. 1895.

Twenty-eighth Annual Report of the Directors of the Massachusetts Infant Asylum. Presented to the Corporation at the annual meeting April 9, 1895.

On Whooping-Cough: Its Great Fatality and the Necessity for Isolation and Rest in its Treatment. By William W. Johnston, M.D., Washington, D. C. Reprint. 1895.

Nerve-Suturing (Neurorrhaphy): Degeneration and Regeneration following Section; Microscopical Appearances. By De Forest Willard, A.M., M.D., Ph.D. Reprint. 1894.

The Diagnosis of Pregnancy during the First Three Months. Remarks on the Treatment of Inevitable Abortion. Cœliotomy for Puerperal Septicæmia and Peritonitis. By Charles P. Noble, M.D. Reprints. 1894–95.

Calomel; A Study of its Physiologic Action and Therapy in Gastro-Intestinal Disorders in One Hundred and Forty-four Cases; Is it a Diuretic *per se?* By W. Blair Stewart, A.M., M.D., Atlantic City, N. J. Reprint. 1895.

Syphilis and Alcoholism of the Brain, Spinal Cord, and Probably of the Nerves of the Legs, followed by Hysterical Contractures of the Flexors of the Knees and a Pronounced Variability of Certain Reflexes. By J. T. Eskridge, M.D., of Denver, Col. Reprint. 1895.

The Physicians' German Vademecum; a Manual for Medical Practitioners for use in the Treatment of German Patients. By Dr. Richard S. Rosenthal, Author of the Rosenthal Method of Practical Linquistry, the Meisterschaft System, etc. Vol. I. Gynecology and Obstetrics. Part II. General Practice. Chicago: The Rosenthal Publishing Co.

Weekly Abstract of Sanitary Reports issued by the Supervising Surgeon-General, M. H. S., under the National Quarantine Act of April 29, 1878, and the Act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service, Approved February 15, 1893. Vol. IX, Nos. 1 to 52. Washington: Government Printing Office. 1895.

The Care of the Baby; a Manual for Mothers and Nurses containing Practical Directions for the Management of Childhood in Health and Disease. By J. P. Crozier Griffith, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Professor of Clinical Medicine in the Philadelphia Polyclinic, etc. Philadelphia: W. B. Saunders. 1895.

La Methode Brown-Séquard. Traité d'Histotherapie, la Thérapeutique des Tissues, Compendium des Medications par les Extraits d'Organes Animaux. Par le Dr. M. Bra. Ouvrage Précédé de lettres e préfaces de MM. les Professeurs Constantin Paul, Mendel, Ewald, Bruns, Emminghaus et Byrom Bramwell. Accompagné de 72 gravures. Paris: J. Rothschild, editeur. 1895.

On Some Symptoms which Simulate Disease of the Pelvic Organs in Women and the Treatment by Allo-Piesto-Myo-Kmetics (Massage) and by Auto-Piesto-Myo-Kmetics (Self-Movements of Muscles under Pressure). By A. Rabagliati, M.A., F.R.C.S. Ed., Honorary Gynecologist, Late Senior Honorary Surgeon, Bradford Infirmary. New York: William Wood & Co. 1895.

The Lumleian Lectures on Certain Points in the Ætiology of Disease, delivered before the Royal College of Physicians, 1892, to which is added the Harveian Oration, delivered before the College in 1893, with a Biographical Notice of Harvey and an Appendix of Statistical Tables. By P. H. Pye-Smith, M.D., F.R.S., Fellow of the College and Senior Physician to Guy's Hospital. London: J. & A. Churchill. 1895.

Remote Consequences of Injuries of Nerves and their Treatment, an Examination of the Present Conditions of Wounds received 1863–65, with additional illustrative cases. By John K. Mitchell, M.D., Physician to St. Agnes' Hospital; Assistant Physician to the Orthopedic Hospital and Infirmary for Nervous Diseases; Lecturer on Physical Diagnosis in the University of Pennsylvania. Philadelphia: Lea Brothers & Co. 1895.

A German English Medical Thesaurus or Treasure of Single and Compound Medical Words and Terms, with Dialogues, Idiomatic Phrases and Proverbs, etc., and German and English Indexes for Physicians and Medical Students. By Rev. Henry Losch, M.D., author of "Improved Method and Complete Manual for the Systematic and Practical Study of the German Language, etc. Philadelphia: Published by the Author. 1895.

The Diseases and Deformities of the Fetus; an Attempt Towards a System of Antenatal Pathology. By J. W. Ballantyne, M.D., F.R.C.P.E., F.R.S.E., Lecturer on Midwifery and Gynecology and on Diseases of Infancy and Childhood, School of Medicine, Edinburgh. With plates. Vol. II. Congenital Diseases of the Subcutaneous Tissue and Skin. Edinburgh: Oliver & Boyd, Tweeddale Court. London: Simpkin, Marshall, Kent & Co. Limited. 1895.

A Book of Detachable Diet-Lists for Albuminuria, Anemia and Debility, Constipation, Diabetes, Diarrhea, Dyspepsia, Fevers, Gout or Uric-Acid Diathesis, Obesity, Tuberculosis and a Sick-Room Dietary. Compiled by Jerome B. Thomas, A.B., M.D., Visiting Physician to the Home for Friendless Women and Children and to the Newsboys' Home; Assistant Visiting Physician to the King's County Hospital; Assistant Bacteriologist, Brooklyn Health Department. Philadelphia: W. B. Saunders. 1895.

Text Book of Operative Surgery. By Dr. Theodor Kocher, Professor of Surgery and Director of the Surgical Clinic in the University of Bern. Translated with the special authority of the author from the second revised and enlarged German edition by Harold J. Stiles, M.B., F.R.C.S., Edin., Senior Demonstrator of Surgery and formerly Demonstrator of Anatomy in the University of Edinburgh; Assistant Surgeon, Royal Hospital for Sick Children. With 185 illustrations. London: Adam & Charles Black. 1895.

A Guide to the Aseptic Treatment of Wounds. By Dr. C. Schimmelbusch, Assistant in the Royal Surgical Clinic of the University of Berlin, preface by Prof. E. Von Bergmann, translated from the second revised German edition with express permission of the author, by Frank J. Thornbury, M.D., Lecturer on Bacteriology, University of Buffalo, N. Y.; Supervising Microscopist in the Bureau of Animal Industry, U. S. Department of Agriculture; Late Senior Resident Physician, Cincinnati Hospital, Cincinnati, Ohio, etc. With 43 illustrations. New York: G. P. Putnam's Sons. 1895.

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The issue of this Journal for the 11th of October, 1894, contains an admirable original portrait of the late Dr. Oliver Wendell Holmes, together with an editorial notice, also a hitherto unpublished poem, and a bibliography of his writings on medical and scientific subjects.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum....................
Albany Medical College....................
Anheuser-Busch Brewing Association........
Antikamnia Chemical Company...Antikamnia
Armour & Co............The Armour Laboratory
Baker, L. W., M.D.... ....Riverview
Baker, Dr. W. H..............................Card
Bartlett, Dr. B. W..........................Card
Battle & Co. ....Bromidia
Bellevue Hosp. Med. Col..... Sessions of '94-95
B. H. R. Distilling Co..........................
Bowdoin College...........Medical Department
Boylston Medical Prize Questions............
Breitenbach Co., M. J...........Pepto-Mangan
Channing, Dr. Walter..........................
Chauncy Hall School..........................
Cocke, Dr. James R.............................
Codman & Shurtleff......Surgical Instruments
Coll. of Physicians and Surgeons, Boston...
Coll. Physicians and Surgeons, Baltimore,
Columbian University..........................
Crittenton, C. N.....................Vinolia Soap
Cutter, Dr. W. P...............................
Dadirrian, Dr..............................Matzoon
Dartmouth College, N. H....Med. Department
Dow Portable Electric Assistant, The.....
Drevet Co..............................Glycozone
Edes, Dr. Robert T...........................Card
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Fairchild Bros. & Foster...........Panopepton
Feeble-Minded Youth, Inst. for..Barre, Mass.
Fehr, Dr. J.......................Baby Powder, etc.
Fellows, James I. ....Hypophos-phites
Fisk & Arnold......................Artificial Limbs
Flood, Dr. Everett..............................
Fougera, E. & Co..............Imp'g Pharmacists 9,
Gear, J. Frank ....Surgical Instruments
Goldthwaite, Dr. S. V...........................
Goode, T. F..................Buffalo Lithia Water
Gould's Medical Dictionary.............. ....
Greene, Dr. E. M........Examinations of Sputa
Harvard University.......Dental Department
Harvard University.......Medical Department
Improved Movement Cure Institute.........
Jefferson Medical College.....................
Kingsbury, Dr. A. D............................Card
Leedom, Charles... ....Nuclein Solution
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Ring, Dr. Allan Mott.........Nervous Diseases
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Schulze-Berge & Koechl......Migranin, etc. 24,
Seeley, I. B. & Co......... .Hard Rubber Trusses
Sharp & Dohme....................Mfg. Chemists
Stedman, Dr. Henry R.......................Card
Tanner, E. S.............................Publisher
Thayer, Henry & Co......................... ....
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Tyrre, J. S. ....Antiseptic Powder
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Waterman, Dr. Thomas..Animal Vaccine Virus
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Wheeler Chem. Works.....Saw Palmetto Comp.
Wheeler, Dr. T. B.......................Phosphates
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1	Anatomy of the Brain	Dr. Dexter	Medical School	12	July 1	July 26	Mo. We. Fr.	10	$20.00
2	Anatomy of the Ear [1]	Dr. Bryant	Medical School	13	Aug. 2	Aug. 30	Mo. We. Fr.	2	20.00
3	Histology and Microscopy [2]	Dr. Ames	Medical School	18	July 15	Aug. 16	Mo. We. Fr.	3	20.00
4	Clinical Microscopy [1]	Dr. Whitney	Mass. General Hospital	17	June 1	June 29	Tu. We. Fr. Sat.	11.30	15.00
5	Clinical Microscopy	Dr. Whitney	Mass. General Hospital	18	July 1	July 31	Tu. We. Fr. Sat.	11.30	15.00
6	Clinical Microscopy	Dr. Whitney	Mass. General Hospital	16	Sept. 3	Sept. 28	Tu We. Fr. Sat.	11.30	15.00
7	Chemistry [3,4]	Dr. Hills	Medical School	30	June 24	July 27	Daily	10	30.00
8	Medical Chemistry [4,5]	Dr. Ogden	Medical School	30	July 1	Aug. 3	Daily	1	30.00
9	Pathological Anatomy [6]	Dr. Taylor	Medical School	14	July 1	July 31	Mo. We. Fr.	3	20.00
10	Pathology of Infectious Diseases [1]	Dr. Wright	Medical School	27	June 20	July 20	Daily	2	25.00
11	Clinical Medicine	Dr. Gannett	Mass. General Hospital	21	July 1	Aug. 16	Mo. We. Fr.	9	20.00
12	Clinical Medicine	Dr. Gannett	Mass. General Hospital	19	Aug. 19	Sept. 30	Mo. We. Fr.	9	20.00
13	Clinical Medicine	Dr. Withington	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10.30	15.00
14	Clinical Medicine [1,7]	Dr. Vickery	Mass. General Hospital	12	June 3	June 28	Mo. We. Fr.	10	15.00
15	Clinical Medicine	Dr. Bowditch	City Hospital	16	June 4	July 26	Tu. Fr.	10	20.00
16	Orthopedic Surgery	Dr. Bradford	Children's Hospital	18	July 1	Aug. 28	Mo. We.	4	20.00
17	Clinical and Operative Surgery	Dr. Mixter	Mass. General Hospital	25	June 4	July 30	Tu. Th. Sat.	11	25.00
18	Clinical and Operative Surgery	Dr. Mixter	Mass. General Hospital	25	Aug. 1	Sept. 26	Tu. Th. Sat.	11	25.00
19	Clinical and Operative Surgery [1]	Dr. Monks	City Hospital	13	Aug. 2	Aug. 30	Mo. We. Fr.	10	20.00
20	Clinical and Operative Surgery [1]	Dr. Monks	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10	20.00
21	Genito-Urinary Surgery	Dr. Watson	City Hospital	13	June 1	June 29	Tu. Th. Sat.	11	20.00
22	Clinical and Operative Surgery [1]	Dr. Conant	Carney Hospital	20	July 3	Aug. 16	Mo. We. Fr.	10	25.00
23	Clinical and Operative Surgery [1]	Dr. Conant	Carney Hospital	19	Aug. 19	Sept. 30	Mo. We. Fr.	10	25.00
24	Clinical and Abdominal Surgery [1]	Dr. Conant	Charity Hospital	13	June 6	July 30	Tu. Th.	10	25.00
25	Clinical and Abdominal Surgery [1]	Dr. Conant	Charity Hospital	17	Aug. 1	Sept. 26	Tu. Th.	10	25.00
26	Intubation of the Larynx [1,8,14]	Dr. Scudder	Medical School	3	July	Aug.			10.00
27	Surg. Apparatus and Bandaging [1,9,14]	Dr. Scudder	Medical School	10	July 8	July 18	Daily		15.00
28	Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	13	July 2	July 30	Tu. Th. Sat.	10	20.00
29	Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	13	Aug. 2	Aug. 30	Mo We. Fr.	10	20.00
30	Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	20.00
31	Minor Surgery	Dr. Brooks	Mass. General Hospital	14	July 1	July 31	Mo. We. Fr.	10	15.00
32	Minor Surgery	Dr. Brooks	Mass. General Hospital	14	Aug. 1	Aug. 31	Mo. Th. Sat.	10	15.00
33	Minor Surgery	Dr. Brooks	Mass. General Hospital	13	Sept. 2	Sept. 30	Mon. We. Fr.	10	15.00
34	Clinical Obstetrics	Dr. Green	Lying-in Hospital	45	June 1	July 31			30.00
35	Clinical Obstetrics	Dr. Green	Lying-in Hospital	45	Aug. 1	Sept. 30			30.00
36	Clinical Obstetrics [1]	Dr. Townsend	Lying-in Hospital	8	Sept. 2	Sept. 27	Mo. Fr.	12	15.00
37	Clinical Obstetrics [1]	Dr. Haven	Lying-in Hospital	9	July 1	July 29	Mo. Fr.	11	15.00
38	Operative Obstetrics	Dr. Haven	Medical School	11	July 8	July 19	Daily	4	20.00
39	Diseases of Children [10]	Dr. Buckingham	Children's Hospital	18	June 1	July 30	Mo. Th. Sat.	10	20.00
40	Diseases of Children [11]	Dr. Wentworth	Children's Hospital	18	Aug. 1	Sept. 28	Daily	10	20.00
41	Diseases of the Ear	Dr. Blake	Eye and Ear Infirmary	12	Sept. 3	Sept. 28	Tu. Th. Sat.	9	12.00
42	Diseases of the Eye [1]	Dr. Standish	Eye and Ear Infirmary	13	July 2	July 30	Tu. Th. Sat.	10	20.00
43	Diseases of the Eye	Dr. Cheney	Eye and Ear Infirmary	22	June 12	July 31	Mo. We. Fr.	9	20.00
44	Diseases of the Larynx	Dr. Farlow	City Hospital	13	June 3	July 12	Mo. We. Fr.	10	[illegible]
45	Diseases of the Nervous System	Dr. Walton	Mass. General Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	[illegible]
46	Diseases of the Skin	Dr. Bowen	Mass. General Hospital	20	July 2	Aug. 15	Tu. Th. Fr.	10	[illegible]
47	Diseases of the Skin	Dr. Bowen	Mass. General Hospital	20	Aug. 15	Sept. 27	Tu. Th. Fr.	10	[illegible]
48	Diseases of Women	Dr. Haven	City Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	[illegible]
49	Diseases of Women	Dr. Washburn	Women's Free Hospital	12	July 1	Aug. 8	Mo. Th.	3.30	[illegible]
50	Diseases of Women	Dr. Washburn	Women's Free Hospital	12	Aug. 12	Sept. 19	Mo. Th.	3.30	[illegible]
51	Diseases of Women [1,12]	Dr. Burrage	St. Elizabeth's Hospital	13	June 3	July 15	Mo. Th.	10	[illegible]
52	Diseases of Women [1,13]	Dr. Burrage	St. Elizabeth's Hospital	13	July 18	Aug. 29	Mo. Th.	10	[illegible]
53	Bacteriology [1]	Dr. Ernst	Medical School	36	July 1	Aug. 10	Daily	3	30.00
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56	Practical Therapeutics [1]	Dr. Tenney	Boston Dispensary	20	July 8	Aug. 21	Mo. We. Fr.	10	20.00
57	Clinical Pathology	Dr. E. W. Dwight	City Hospital	14	Aug. 1	Aug. 31	Tu. Th. Sat.	10	15.00
58	Clinical Pathology	Dr. E. W. Dwight	City Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	15.00
59	Clinical and Abdominal Surgery	Dr. Elliot	Mass. General Hospital	21	June 3	July 19	Mo. We. Fr.	11	15.00
60	Clinical Surgery	Dr. F. B. Harrington	Mass. General Hospital	18	July 2	Aug. 30	Tu. Fr.	11	20.00
61	Surgery of Children [1]	Dr. Lovett	Children's Hospital	13	Aug. 17	Oct. 1	Tu. Sat.	4	20.00
62	Genito-Urinary Surgery [1]	Dr. Thorndike	City Hospital	13	Aug. 2	Aug. 30	Mo. We. Fr.	10	20.00
63	Genito-Urinary Surgery [1]	Dr. Thorndike	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10	20.00
64	Practical Pharmacy [5]	Dr. C. Harrington and Mr. Jordan	Medical School	12	July 1	July 26	Mo. We. Fr.	4	20.00
65	Practical Pharmacy [5]		Medical School	12	July 29	Aug. 23	Mo. We. Fr.	4	20.00
66	Pathological Histology [14]	Dr. Mallory	Medical School	25	July	Aug.			20.00
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PAGE

LECTURE.

The New England Invalid. Shattuck Lecture for 1895. *By Robert T. Edes, M.D.*, Jamaica Plain, Mass. (Continued.) 77

ORIGINAL ARTICLES.

Penetrating Wounds of the Abdomen. *By James G. Mumford, M.D.* 81

Three Cases of Laparotomy for Penetrating Wounds of the Abdomen, with a Report of Fifty-Six Cases of Perforating Abdominal Wounds other than Gunshot Wounds. *By Charles L. Scudder, M.D.* 85

CLINICAL DEPARTMENT.

Pyelo-Nephritis; Nephrectomy; Recovery. *By S. Vale Goldthwaite, M.D.*, Boston 86

A Case of Stab Wound of the Abdomen, with Wound of the Intestine; Protrusion of the Intestine through the Wound; Operation; Recovery. *By George H. Monks, M.D.* 87

REPORTS OF SOCIETIES.

Surgical Section of the Suffolk District Medical Society. *C. L. Scudder, M.D.*, Secretary 87

Penetrating Wounds of the Abdomen.—A Case of Stab Wound of the Abdomen; Wound of the Intestine; Prolapse of the Bowel through the Abdominal Wound; Operation; Recovery.—A Case of Gunshot Wound of the Kidney.—A Résumé of Cases of Penetrating Wounds other than Gunshot Wounds, up to Date.—A Case of Pyelo-Nephritis; Operation; Recovery.—Pathological Specimens.

American Surgical Association. New York, May 28, 29 and 30, 1895. (Continued.) 91

Clinic at the Roosevelt Hospital.—Treatment of Cancer of the Breast.—The Modern Operative Treatment of Rectal Cancer.—The Present Status of Anesthesia.—Circumstances under which Chloroform is Preferable to Ether as an Anesthetic.—Influence of Ether upon the Kidneys.—Restoration of Joint Function after Fracture.—The Influence of Ether Narcosis upon the Genito-Urinary Tract.—Gunshot Wounds of the Heart.—Personal Experiences with Mad Dogs.—The Radical Cure of Hernia by a New Procedure.—Ligature of the Spermatic Cord in the Treatment of Hypertrophy of the Prostate.—Dislocation of the Ulnar Nerve at the Elbow: a Report of Fourteen Cases.

EDITORIALS.

Cholera in England in 1893 95

A Training-School for Nurse Attendants 96

Medical Notes 96

Proportion of Medical Students.—The Library of the Surgeon-General's Office.—Proposed Memorial to Professor Huxley.—Etiology of Actinomycosis.—Hospitals for Tuberculosis.—Yellow Fever finds Many Victims in Cuba.—Self-Poisoning by Chloroform.—Logic in a Coroner's Jury.—Nephropexy by Tendon.—Medical English in India.

Boston and New England.

A Training-School for Nurse Attendants.—Cause of Marlboro's Typhoid Fever Epidemic.

New York.

Quarantine against Cuban Vessels.—Management of the Insane of New York City.—An Operation for Appendicitis in a Child of Three Years.—Death of Dr. George H. Smith.—Mortality from Diarrheal Diseases.

CORRESPONDENCE.

The Castration of Criminals. *Mark Milliken, M.D.*, Hamilton, O. 98

Is the Handling of Artificial Fertilizers Injurious to Health? *Henry H. Covell, M.D.*, Rochester, N. Y. 99

MISCELLANY.

Popular Therapeutics at the Beginning of the Eighteenth Century 97

Meteorological Record, July 13, 1895 99

Record of Mortality, July 13, 1895 99

Army and Marine-Hospital Services 100

Books and Pamphlets Received 100

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

FOR PROFESSIONAL CARDS, MEDICAL SCHOOLS, ETC.,

See pages 16, 17, 18 and 19.

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DR. ROBERT T. EDES,
Jamaica Plain, Mas

who will furnish the printed form to be used for purpose.

See Advertisement of

VINOLIA SOA

PAGE 21.

Lecture.

THE NEW ENGLAND INVALID.[1]

SHATTUCK LECTURE FOR 1895.

BY ROBERT T. EDES, M.D., JAMAICA PLAIN, MASS.

(Continued from No. 3, p. 57.)

THE relations of uterine disease and neurasthenia are interesting and important. No one now supposes that there is any necessary and specific relationship between such disease and hysteria, the most cogent argument being that men, although much less frequently, become typical subjects of the nervous affection. The logical connection between the two conditions in a particular case, both being present, is far from easy to establish, and when it becomes doubtful as to how far either of them may have become dependent upon imagination, habit, or a fixed idea, the task becomes still more difficult.

A considerable amount of irregularity of the uterine functions, or rather a great increase in the amount of pain and general disturbance with which they are accomplished, is a common result of what is clearly a nervous condition, as much so as the gastric, intestinal and cardiac symptoms. It is quite true of "nervousness," as has long been remarked of hysteria, that the more serious organic affections, like fibroid or cancer, have no special tendency to its production except, of course, so far as hemorrhage or long-continued pain may do so.

"Many of the nervous and even mental disorders, often assigned to 'reflex ovarian irritation' are the direct expression of cerebral disease or cerebral malnutrition, which also causes the vaso-motor paresis in the vascular territory of the ovaries." [2]

On the other hand, there are among our patients, even with the careful selection to which they are subjected before their admission, some in whom the much accelerated recovery after local pelvic treatment of the uterine symptoms shows that they are neither imaginary nor merely an accidental coincidence.

There is a belief, however, acknowledged and acted upon, that in some cases the effect of operative treatment is due to its decided psychical effect, in regard to which I shall have occasion to speak farther on. One may consult on this point with great advantage a paper by Dr. J. William White, on "The Supposed Curative Effect of Surgical Operations *per se*." *Annals of Surgery*, August and September, 1891.

When, however, the "slight local treatment" to which one of our patients attributed her partial improvement consists, as we know from other sources that it did in her case, of a removal of both ovaries, the matter is worthy of serious consideration.

Twenty-seven persons whose names are upon our books have had both ovaries removed for the relief of nervous symptoms. These organs were in some cases healthy or nearly so, and in others indurated and adherent. Of these, three or four recovered or nearly so, one or two of them having been not very far from the natural menopause.

Three or four others have improved after years of invalidism, so that it may well be doubted how far their recovery was accelerated.

One died of pulmonary tuberculosis and other diseases not connected in any way with the operation. One died of cocaine, one shot herself six months after "a highly successful operation."

Another case, herself a physician, in no way connected with the Adams Asylum, underwent the operation, partly, but I could not make out just how largely, at her own desire. She had had convulsive attacks, probably hysterical, and progressed steadily to hopeless insanity.

She had been an advocate of the operation, and had urged it upon a patient whom I had referred to her but who recovered without it, and at a later period called upon her in her own sickness. I do not know whether the merits of the operation were discussed at that interview, but the subject might have given rise to a very interesting conversation.

Our experience would not support the usual statements as to the almost absolute harmlessness of the operation. One of our patients, a strong and comparatively young woman who suffered extremely from dysmenorrhea and hysteria, was, at her own request and after a full explanation, submitted to the operation at a hospital where you would admit that as good surgery is done as can be done, and died in a week, with no trace of septic infection, but apparently solely of the nervous shock taking the form of stuporous melancholia.

The conclusions to be drawn from these cases are that the chances of improvement from the removal of healthy ovaries from a young woman affected with nervous symptoms are exceedingly small, and that the operation should be reserved for those desperate cases where nothing else offers a prospect of relief near or remote, and where death may fairly be considered preferable to a suffering life.

The chance of a favorable psychic effect may be fairly offset by the much greater probability of an unfavorable one, in the development of a new set of morbid ideas, the disappointment at failure, the feeling that she is not like other women, and the chance of death.

When ovaries are distinctly diseased or the tubes filled with pus, or hemorrhage from a fibroid is wasting the patient's strength, then the question is no longer neurological but surgical, and should be looked at solely from that standpoint.

It is worth noting at this place that 276 married women under sixty, in regard to whom this point was recorded, had 566 children; 62 were childless, 71 had one child each, 53 two, and there were only eight who had had more than six.

Theories of auto-intoxication are not easy to deal with clinically in the absence of extensive laboratory facilities, of which the chief and most essential would be a chemist such as there are but few of.

When the blood in quantity is not to be obtained, the ease with which either an excess or deficiency of a given substance in the urine can be interpreted to mean an excess in the blood or in the tissues, gives an elusive character to the research more entertaining than instructive. A good many examinations have been made in the cases now under discussion which have gone beyond the determination of the presence or absence of albumin, but have not been numerous or regular enough in most cases to enable the course of elimination to be watched for any length of time. There is not a great deal of interest to be found therein, except possibly the general conclusion that the vital metamorphoses, as indicated by urea, often uric acid, and the total amount of solids, are taking place but sluggishly.

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[1] Delivered before the Massachusetts Medical Society, June 11, 1895.

[2] Dr. Mary Putnam Jacobi: MS.

The urine is apt to be small in quantity, and, although of high specific gravity, not sufficiently so to bring up the total amount of elimination to the normal standard; normal, that is, as regards a person on full diet. There is, however, no reason to look for any poisonous retention due to deficent action on the part of the kidneys.

The phosphates have been determined only in a few cases from the feeling that, however close the relation may appear on chemical grounds between their excretion and the combustion of nervous tissue, yet the amount of variation in the quantity derived from this source would be so entirely obscured in the much larger quantity derived from the tissues generally and from the food, as to be not worth considering, unless the latter, the food, can be brought to a constant value, a condition not easily carried out.

In view of recent theories of the relation of neurasthenia to so-called lithemia, and headache as a special symptom, a considerable number of quantitative determinations of uric acid have been made, which seem to me to lead to the unexpected conclusion, that although there may be, as Dr. Haig's observations seem to show, such a thing as a uric-acid headache, the neurasthenic headache is not of that character.

For reasons easily understood no search was made for organic substances like paraxanthine, requiring the evaporation of several litres of urine for their detection.

It is a rather singular fact, considering the wide diffusion of the lithemic doctrine, that "suppressed gout" is mentioned only once in our papers as among the probable causes of nervous prostration.

The number of cases among 65 in which the proportion of uric acid to urea was determined, in which it exceeded that laid down by Haig as the average, namely $\frac{1}{33}$, is very small altogether, and in most of these for only a single observation each. There is nothing in common to them which would enable one to connect this condition with any degree of probability, to any special symptom. The largest, $\frac{1}{12}$, was in a case of neurasthenia, where the total urine for twenty-four hours was very small, 400 cubic centimetres, and the urea corresponded, while the uric acid was apparently a little increased with reference to the usual daily output. The only case where an increased proportion corresponded to severe nervous symptoms, was one of very persistent headache, so severe and so constant that the idea of organic disease was entertained but never found other sufficient support. The fractions found at various times were $\frac{1}{26}$, $\frac{1}{36}$, $\frac{1}{30}$, $\frac{1}{34}$, $\frac{1}{32}$.

It is important to note that in this case, where there was no pronounced gastric disturbance, the weight constantly diminished.

In another case, in many respects similar, but where the weight increased without a corresponding improvement in the headache, the proportion of uric acid to urea was mostly between $\frac{1}{50}$ and $\frac{1}{60}$.

Other cases of increased proportion were of gall-stone; hysterical paraplegia and contracture, with great emaciation and gastric disturbance; chronic gastritis, improving and gaining weight; agoraphobia; debility; melancholia; severe dysmenorrhea and hysteria; convalescence (rapid) from hysterical vomiting; and idiopathic anemia.

In the cases where a number of observations were made upon the same patient it is just as difficult to trace any constant connection between excretion and fluctuation in symptoms. Since, however, an increased amount of uric acid in the urine may mean either that there is a large amount in store, or that it is being rapidly washed out, and, on the other hand, a diminished quantity may mean either that little is being formed or else that it is being held back in the tissues or again in the blood, it is very difficult to use these figures against any theory which might be brought forward.

As to the total daily output of uric acid it is equally difficult to connect increase or decrease with definite symptoms. In not a single instance did it reach one gramme per diem. The nearest to it (.870 mgr.) was from the case of gall-stone.

The case of severe headache with a large proportion, also had rather a large total amount in twenty-four hours.

An auto-intoxication theory might easily be built upon the extremely frequent and important connection between constipation and conditions of great depression.

It is important to correct this symptom, and a permanent improvement is very likely to accompany the abatement of nervous symptoms, yet the latter does not follow with that speed and certainty which we should have a right to look for if melancholia were merely a sort of narcotism from retained intestinal toxins. There is as yet no distinct chemical evidence of such an action.

The secretion of the skin is as likely to be increased as diminished, so far as quantity goes, and I am aware of no observation as to its qualitative condition.

In short, we may say that while it is very important for therapeutic purposes that all the secretions should go on properly, we cannot point to any one of them as more to blame than another as holding back excrementitious matter, nor to any one constituent as the specific poison.

The making of fat and blood are almost proverbially connected with the cure of nervous debility, since their development has been systematized by our distinguished countryman, Weir Mitchell, and his followers.

Blood examinations are not difficult nor time destroying to make, but are unfortunately wanting in accuracy, when dependent upon color comparisons as so many of them are. Many such have been made by myself, and afterwards the same specimen estimated by several of the nurses, who acquired a considerable experience. The discrepancies in the individual readings of the Fleischl hemometer were usually decided and the averages varied between different observers within quite wide limits, and, what is especially unfortunate, the differences were not constant and no personal equation could be established by which the reading of one observer could be reduced to that of another. I find in my own case that I almost invariably read a higher percentage than any of the nurses, but the difference was not constant. I did hot, however, obtain absolutely high results. I think the establishment of a physiological standar by a large number of observations and also some so of approximation to the limits of error in persor equations, would be a very useful piece of work. In the hands of the same observer, however, for purposes of comparison the Fleischl hemometer is a very useful and convenient one.

For the globular richness the hemocytometer of Hayem and Gowers, especially in the form now usually employed of Thoma-Zeiss, is, if a sufficient number of observations be made, an extremely useful instrument for diagnosis, but as many of you know, a most wearisome and time-spoiling one. A standard for this is needed also.

I have a strong impression, based however on too small a number of observations to make it more than that, that the Thoma-Zeiss now in use would give a considerably higher average than a Gowers made in this country, which I employed some years ago.

An extremely useful instrument, not requiring so much delicacy of manipulation as the blood-counter or the color-tests, and giving, it seems to me, very trustworthy results, is the centrifugator or hematocrit as improved by Dr. Daland and Mr. Metzger of Philadelphia. This gives the actual proportion, by bulk, of red corpuscles in a large drop of blood and, with a little care, the white corpuscles, too, can be determined with a useful degree of accuracy. With this instrument and the Fleischl it seems to me that the condition of the blood can be followed with only a moderate expenditure of time, the numerical estimation and the differential examination of white corpuscles being needed chiefly for a single or repeated diagnostic examination.

When we speak of anemia, however, we have in mind two different conditions which are very apt to be confounded. By local anemia we generally refer to the bulk of fluid-blood brought or remaining in the part, but when we talk of anemia in general, it is a question, not of bulk, but of richness in corpuscles and color, forgetting that it is just as possible that the total amount of blood in the body may be deficient as that contained in some portions.

This total quantity it is evidently utterly impossible to measure; in fact it is so difficult to measure even after death that the physiologists have been unable to get at it with satisfactory accuracy except by quite elaborate procedures. We can only guess at it by the color of the skin and visible mucous membranes, the tension of the pulse, and the rapidity of flow from a puncture and so on, which are all obviously only rude methods of making several local estimates to be combined into a general one. I have certainly found what seemed an abnormal difficulty in obtaining from a puncture a satisfactory amount of blood for some examinations, on account of the sluggishness of the flow, in cases where the quality was not very deficient. There seems no reason why this total quantity might not vary considerably in different persons, as well for instance as adipose tissue; so that a person with a very good count as regards corpuscles and color might really be anemic, that is, not have enough to go round properly.

Speaking in a general way, I should consider a large part of our patients somewhat anemic as to quality, that is, they have a count a little below the normal and a color a little below that again, as is well known to be the rule in symptomatic anemia, and the reverse of the relations existing in pernicious anemia. The quantity, had we the means of measuring it, I feel quite confident, judging from the complexion, the slow bleeding from punctures and the peculiar pulse and tracing, would be decidedly below the standard of health.

Hence many of them "pan out," so to speak, in the instrumental tests, better than they look and better in fact than they really are.

On the other hand, extreme anemia, excluding cases of organic disease other than nervous, is not common. When found in a patient sent in with a diagnosis of some functional nervous trouble I consider that it calls for special care in the search for some underlying condition.

A very good blood color, that is, one of 75 or 80 per cent. Fleischl, is not at all inconsistent with serious and persistent debility and many nervous symptoms. I speak of this as "good" because I am sure that it may often be found in persons in excellent health. I cannot get much above this in my own person, and I have heard the same remark made by a colleague of sufficiently healthy embonpoint and rather an unusual (for an American) floridity of complexion. The statement has also been made by others that the standard (100% = normal) of the Fleischl is set too high for the average American.

Thus a good blood-count is of favorable import as regards the condition of the general health and, of course, on that basis, of a favorable tendency as regards special nervous symptoms, but it is not at all conclusive as regards speedy recovery. One patient who had a color-test of 87 per cent. has been an invalid ever since and has applied to be re-admitted. Another with 87 per cent., was somewhat relieved by local uterine treatment but said she never expected to sleep well again. Several others with from 75 to 95, as determined here, have remained invalids for months after leaving, including one case of chronic insanity with delusions.

These cases are not brought forward as a basis for a rule, for the examination has not been made as a matter of routine. Most patients, where the general appearance coincided with the symptoms, were not examined at all in that way. One of the most striking cases was that of a woman whose appearance, emaciated, pale, worn and distressed, corresponded exactly with her complaints of pain in every part of her body, which we, as well as our predecessors and successors, found it equally impossible to account for or to relieve. We have heard that she has since been in an insane asylum. She had, however, two days after admission, color 75, corpuscles 4,650,000. Three weeks later color 66, and two months and a half later 76.

In fact, the relations of blood-richness, quality and local distribution may be best understood by a comparison to the water-supply of a large manufacturing and business city and an outlying suburban district. A moderate diminution will not be allowed to interfere with the working of the important interests of the great centre but will be shown chiefly in the dirtiness of streets and a want of color in the outlying lawns and gardens, while, on the other hand, no possible abundance, though it may make the wilderness to blossom like the rose, can restore business activity to machinery and apparatus which is not fitted to make use of it. If water-wheels are broken down and rusted from disuse in a long-continued drought they cannot be set going to advantage all at once by a freshet.

This comparison might be carried a step further by suggesting that the quality of blood, as well as of water, may vary in different parts of the same system, It is strikingly shown, not only by well-known chemical results, but by the interesting observations of the younger Mitchell on the immediate increase of the red corpuscles after massage, showing that they must have been stirred up and put in general circulation from the deeper portion of the vessels just as a local freshet or energetic gang of loggers increases the logs in the river below. The time is too short to make a theory of new formation at all tenable.

It is more than probable that many of the nervous symptoms connected with disturbances of the circulation depend rather upon deficient blood tension, pressure and supply than upon its exact chemical composition. A person with blood of the richest quality may faint on very slight provocation if the heart's action is so depressed as to suddenly alter the cerebral pressure. On the other hand, the frog's reflexes act for hours after his blood has been thoroughly replaced by a solution of salt. A similar result is seen in the rapid restoration from intravenous salt injections in the cholera patient, whose blood is too thick instead of too thin, and in other kinds of collapse, where a hemorrhage has drained the vessels of their contents as a whole, without any proportional impoverishment of any special element. The condition of the circulation in a considerable number of neurasthenics may be described as a too small quantity of blood which is a little "off color" pumped feebly into resisting arteries.

The general nutrition, as indicated by gain or loss of weight, is usually looked upon as having special significance with reference to prognosis and treatment in functional nervous affections, and increase in flesh with increase of nerve force as almost convertible terms.

It is highly satisfactory to have so simple a standard. Fortunately it is often correct, and cannot in any event easily lead to any harmful error, but it is worth pointing out that there are important and not rare exceptions to the rule.

A considerable and nearly constant rise of weight, in a case which is decidedly under weight to begin with, is undoubtedly of favorable import. It proves, of course, that the digestive organs are doing their work with effect, even if it should happen to be with some difficulty and discomfort. If this be accompanied with decided and more or less parallel gain in the specially nervous symptoms, like insomnia, headache, backache and general strength, the prognosis is decidedly favorable, not only as to speedy but somewhat permanent recovery.

Where, however, the gain is slow and slight and the nervous symptoms do not improve for some time, it seems highly probable that the patient, even if ultimately materially better, will be very likely to fall back again when the surroundings become less favorable.

If the patient be already of sufficient body weight the desirability of increasing it is not great, and if a gain is made, or at least any extreme gain, it cannot be considered an adva tage.

These remarks apply especially to well-marked neurasthenia and melancholia. Fat hysterics and dements are sufficiently well known.

A constant and decided loss of flesh is, of course, an exceedingly unfavorable condition, but I can recall at least one case where the patient made a fluctuating record of weight with the ultimate loss of a pound or two, having been below weight to begin with, where the general improvement went on in a similar fluctuating way, but at the time of discharge was in every respect a considerable one. Generally the fluctuations which occur coincide pretty closely with the improvement, or the reverse, of the other symptoms. One case, however, being rather a stout woman of the flabby neurasthenic type, gained quite rapidly in weight for some months, and at the same time slowly as regards nervous symptoms. Then she fell off less rapidly but steadily in weight, but did not lose the gain made in other respects, and has continued to improve since. I do not, however, know the history of her weight after leaving the Asylum.

On the other hand, there have been quite a number of cases where the improvement has been not only real but very striking, with but little, if any, increase in weight, and this, too, when the original weight was below normal.

Of course, in cases in which the chief severity of the symptoms consists in digestive derangements the gain of weight is especially encouraging.

It is not only practically true but theoretically reasonable that the building up of all the tissues as indicated by body weight, although a most excellent, and in many cases essential, preparation for nervous repair, should not be all that is needful. The molecule of nervous protoplasm is undoubtedly a most complex one. It is the most delicate, most choice and precious of all living matter, and it is not to be built up by the same gross processes which turn starch and sugar into fat, or even gluten into blood-albumin.

Intellect, feeling, courage and will are not to be expressed in terms of potatoes or eggs or phosphates, even "vitalized," or alcohol or coffee.

The neuron is a growth, a structure, with its periods of increase and decay, and it is a view which leads to imperfect practical results to look upon it simply as a reservoir in which energy can be stored up at will by a mere outside pressure of nutritive material.

It is undoubtedly true that every nerve process has its equivalent in a chemical decomposition, but it is not possible to reverse the process and make chemical, electric or any other force into nerve action at will, any more than it is possible to make the whole of the mechanical energy of a pound of coal into light without the greater portion of it going inevitably to less subtle and less desirable forms of force. The most that can be done is to present an abundant supply of material from which the nerve cell must select and build up according to its own law of growth.

I have no doubt that in many cases where we see a parallel improvement in weight and in general recovery of nervous tone, that the general nutrition is favorably influenced by the restored function of the trophic nerves in stimulating secretion and growth, quite as much as because an excess of nutriment has been presented to the nervous centres.

People generally grow fat because they have ceased to worry quite as much as they grow cheerful because they have become corpulent. Cæsar says indeed:

> "Let me have men about me that are fat,
> Sleek-headed men and such as sleep o' nights:
> Yond' Cassius hath a lean and hungry look:
> He thinks too much: such men are dangerous."

But the Scripture has it (Deuteronomy xxxii, 15):

> "But Jeshurun waxed fat and kicked: thou art waxen fat, thou art grown thick, thou art covered with fatness; then he forsook God which made him, and lightly esteemed the Rock of his salvation."

If we exclude the distinct hysterical element for which numberless theories have been framed, it is by no means easy to make one which shall cover all the cases in which nervous exhaustion seems to play the principal part, and the chief difficulty appears to lie in those not very rare cases where the assignable or assigned cause is entirely inadequate to the effect claimed, and yet where the result is approximately the same as when the exhaustion is the legitimate consequence of actual and excessive overwork and anxiety, or overwhelming shock.

We can understand why successive, perhaps unexpected deaths of near friends, perhaps after an exhausting period of nursing, should produce a complete temporary loss of mental vigor, and an absolute inability for action or decision, as well as many disturbances of the nutritive functions; but when a somewhat similar condition is supposed to remain for many years after the peaceful death of a parent at a good old age, except by assuming that immensely greater differences exist in nervous susceptibility of different persons than can be detected in regard to ordinary diseases, it is difficult to make the same anatomical explanation cover both cases.

We have now accurate anatomical descriptions by Hodge and his successors in the work, of the appearance of exhausted nerve cells under the microscope, showing that they undergo decided changes after rest and action identical with those to be seen in other cells, those of the stomach for instance, when in a state of functional activity or the reverse.

The condition of permanent exhaustion has not, to be sure, been directly observed in the same way, and it is doubtful if it ever will be, since the changes are of a too delicate kind to be preserved for hours after death, while, experimentally, it would be difficult to imagine a method of imitating the kind of constant irritation which brings about this condition in our own species.

Perhaps the victims of the abominable experiments of Mantegazza might have furnished material at a price infinitely beyond any possible advantage from such refined cruelty.

The nearest approach is perhaps to be found in the lesions of chronic insanity, which are, however, even now not clearly ascertained, except in general paralysis, where they are, as you know, of a more fixed, and probably of a more obvious, character. In the latter disease, we have, in a large proportion of cases at least, toxic and diathetic causes at work, in addition to the simple chronic congestion of over-excitement.

(To be continued.)

Original Articles.

PENETRATING WOUNDS OF THE ABDOMEN.[1]

BY JAMES G. MUMFORD, M.D.

In these days no one man can have a large experience with penetrating wounds of the abdomen. The fact that every case of this kind creates a furor in the community and a stir of surgical interest is evidence enough of this. I doubt if any man in this audience has had a dozen such cases in his whole experience.

With the object of studying this subject, I have taken the experience of the Massachusetts General Hospital for twenty-four years, and attempted to thoroughly familiarize myself with the cases entered there within that period. They form the basis of this paper; but unfortunately, and to my surprise, I find that the total number is but thirty-eight.

The scope of this paper, therefore, is to take up the list of cases in considerable detail, to analyze them with some care, to compare the results reached with the results of other men, and to draw what conclusions such data seem to justify.

The police records of Boston may show a surprising increase in assaults and murders of recent years; I fancy they do so. Certainly the hospital records for the past decade indicate a very large increase in abdominal wounds due to crime.

Of penetrating wounds of the abdomen, from 1869 to 1873 there were none; in 1873 there was *one;* in 1874, *one;* in 1877, *one;* in 1878, *two;* in 1882, *one;* in 1883, *one;* in 1886, *three;* in 1887, *one;* in 1888, *three;* in 1889, *three;* in 1890, *one;* in 1891, *three;* in 1892, *five;* in 1893, *eight;* in 1894, *four;* a total of thirty-eight in twenty-four years; and of the twenty-four, nine years were entirely destitute of any such casualty.

Previous to 1870, which date I have chosen as a convenient point of departure, the cases of penetrating shot wounds of the abdomen were still rarer. In the hospital records, from their beginning in 1821 down to 1859, there are none such. From 1859 to 1870 there are seven cases with five deaths. One of the two recoveries was from an old war wound, which had terminated in convalescence with fecal fistula; in the other there was no evidence of penetration. If we count out these cases, as we are justified in doing, five cases remain, with a mortality of 100 per cent.

For the sake of our death-rate it is perhaps fortunate that the very large majority of cases since 1870 was in young, vigorous adults; five were women, thirty-three were men. At the Massachusetts General Hospital the death-rate from these injuries, especially from shot wounds, is high to-day; as high practically as it ever was.

The work of W. T. Bull, of New York, in 1886, as much as any one thing, gave the impetus to rational operative treatment in these cases; and since that time a large number of successful operations have been reported from other quarters. The best series of this kind that I have found, and for the purposes of comparison, far the most satisfactory, is that of A. B. Miles, of New Orleans; his paper was published in the *Annals of Surgery,* 1893. He remarks that abdominal sections are wise, as successful results are on the increase, and that the inaction method is rapidly becoming obsolete. This statement is in a sense true, but is somewhat misleading, I believe.

P. Ralph Egan, U. S. A., contributed a very valuable paper on a case of gunshot injury to the ascending colon, last year in the *Boston Medical and Surgical Journal.* His article is lucid and conservative, and he insists upon the fact, long recognized but too often overlooked, that the character and seat of visceral perforations are most important factors in prognosis.

Miles had thirteen operative cases with eight deaths. This is a remarkable showing; but in spite of so brilliant a success he appears to apologize for having such a high death-rate.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, May 1, 1895.

A study of his cases shows that in all of the eight fatal ones there was extensive laceration of the small intestine, with fecal extravasation. Why did the remaining five recover? Four of these fortunate ones were vigorous young men, operated upon within one or two hours of the accident, and found to have *no fecal extravasation*, the bowels being empty. They may possibly have recovered without operation. That they did recover after a careful enterrorraphy is not surprising. The fifth case of recovery is the only one, as reported in this list, which is of any unusual interest. He was a young man in good condition. Profuse hemorrhage, and ten large jejunal wounds with extensive extravasation were found. This man was washed out and stitched. He recovered.

I might go into an extended discussion of the causes why eight of Miles's cases died and the first four above mentioned recovered. Suffice it to say, that after a considerable study of similar cases I find that those which die are mostly similar to those in his mortality list, and that those which recover usually present conditions such as did most of his successful cases — a peritoneum uncontaminated by feces.

I shall consider both stab wounds and shot wounds in this paper, because I fail to see any essential distinction between them when the viscera are perforated. The greater rarity of stab wounds perforating the viscera accounts, of course, for their lower mortality.

This consideration regards treatment only. On the other hand, because there is a vast distinction between shot and stab wounds, as regards their actual mortality. I shall discuss each class separately.

With both classes of wounds I am convinced that exploratory operation is almost imperative in all cases.

Stab wounds very rarely perforate the viscera.

In my list there are nineteen stab cases in which the abdominal cavity was opened. They were all operated upon. This is in itself an interesting comment on the boldness of surgeons in such cases. Where a knife in the assassin's hand has already opened the peritoneal cavity the surgeon seems ready to follow with his scalpel. I refer more especially to fifteen or twenty years ago, when gunshot wounds of the abdominal cavity were seldom explored.

Three of these nineteen stab cases died, a mortality of 15.7 per cent. All three were unusually serious cases.

In the first the external iliac artery was opened, and the man died of hemorrhage.

In the second case the spleen was lacerated. According to the Civil War statistics this injury is attended with a mortality of 93.1 per cent. In this case of ours, however, it seems probable that the man might have recovered had it not been for an unfortunate complication at the time of the accident. He was stabbed in a street row. A neighboring doctor was summoned who examined him as he lay upon the ground, thrust his finger through the epigastric wound and explored the viscera. With what object it is hard to conceive. At the hospital the hemorrhage was easily controlled — none but the splenic lesion existed — but the man died of acute peritonitis on the ninth day.

The third fatal case of stab wound occurred in the autumn of last year. The omentum and stomach presented large ragged lacerations, with free hemorrhage and extravasation of the stomach's contents. The man died of peritonitis on the third day. I shall take occasion later to speak of the mortality in wounds of the stomach.

All of the remaining stab cases, sixteen in number, recovered; and of these sixteen, fifteen escaped penetration of the alimentary track. That, in a word, is their history; and they may be dismissed with a very few words. The wounds were in all parts of the abdomen, inflicted with all kinds of cutting instruments; rusty nails, splinters of wood, razors and stilettos. The omentum was frequently lacerated, the viscera sometimes protruded, and there were several cases of considerable hemorrhage, but in no case, when the gut remained sound were there any symptoms to cause alarm.

All of these cases were operated upon, and since 1885, thoroughly explored. The omentum was frequently resected when it was found to protrude; but whether returned or resected, the patient always recovered. All this but goes to emphasize again the safety with which the abdominal cavity may be opened for exploration; and such statistics may be used as a corollary to the old problem, Shall the abdomen always be opened after gunshot injuries?

Of these stab wounds which did not prove fatal one interesting and unique case remains to be mentioned:

In the service of C. B. Porter, some two years ago, a lad of fifteen was brought to the hospital, with a three or four inch lacerated penetrating wound in the left inguinal region. Three feet of the small intestine lay outside on the abdominal wall, and liquid feces oozed from a small rent in the gut. Two hours previously the boy had fallen upon a hay-fork, one of the prongs of which had not only transfixed the bowel, but had brought it outside the peritoneal cavity. The very interesting point in the case is that, although there was extravasation of feces, the general peritoneal cavity remained unpoluted; the abdominal wall being the only sufferer. The bowel and torn mesentery were thoroughly cleansed, repaired and returned to the abdominal cavity. The parietal wound was sewed up without drainage and the boy recovered perfectly in three weeks.

Of these nineteen stab-wound cases but one occurred prior to 1886, that being the fatal one in which the external iliac artery was wounded.

With that we may dismiss the stab cases for the present.

The subject of far more vital interest is that of gunshot wounds. I have not been able to draw a careful distinction between injuries at long and short range or from different calibre bullets. Those points are not always noted in the records, and I cannot see that they are factors materially affecting the treatment.

The number of gunshot wounds and of stab wounds is the same for the last twenty-four years, namely, nineteen of each variety.

Twelve of the gunshot victims died, a mortality of 63.15 per cent.; seven recovered. Of these twelve fatal cases, the five prior to 1888 were not operated upon. The seven since 1888 were all operated upon. In all of these twelve cases the viscera were perforated; the deaths being due to extravasation from the stomach and intestines, to injury of the kidneys, or to a wounded aorta.

In one instance an enormous ragged hole in the stomach, with extravasation, caused death. In all of the seven cases in which the small intestine was opened, death followed. In two cases a wounded kidney was the cause of death; in one case a wound of the aorta; and in another a wounded spleen.

Many of these cases had other and obvious complications, but the immediate causes of death were those given above.

Be it noted that, as with stab wounds, so with gunshots: in every case in which there was extravasation into the general peritoneal cavity, whether or not an operation was done, the patient died.

Including stabs and gunshots, of six wounds of the stomach, four had extravasation and died. Of eight wounds of the small intestine, seven had extravasation and died. Of three wounds of the colon, all died with extravasation. Of two wounds of the spleen, both died. Of four wounds of the liver, two died. The aorta was wounded once, and the external iliac once; both cases died. The kidney was wounded twice; both cases died. But in twelve cases the abdominal cavity was opened *without* injury to the viscera (by stab wounds eight, by shots four), and every one of these cases recovered rapidly and completely.

Of the seven cases that recovered after gunshot wounds, five had no perforation and two had perforation of the stomach only.

The reason for this lowered mortality in cases of gunshot wounds of the stomach is not far to seek.

That the mortality is distinctly lower than with wounds of the small intestine has long been well recognized. In the Civil War records the mortality for stomach wounds is put as low as 75.9 per cent.; while that for the intestines is put at 89.4 per cent. (a misleading figure, because wounds of the small intestine are more fatal than wounds of the colon).

Now the mucous membrane of the stomach is very movable, as the submucous tissue is very loose. The folds of mucous membrane meet at different angles and so form a plexiform appearance. The external longitudinal muscular layer is much thicker than the inner circular layer. The general structure is much thicker and looser towards the cardiac end, and the whole organ has from one-third to one-half again the thickness of the small intestine. Hence it will be seen that when a small hole is punched through the stomach the mucous membrane acts like a valve, the muscles promptly contract and it becomes almost impossible for extravasation to take place.

The small intestine is thinner than the stomach; its various coats are more closely associated, and the muscular longitudinal layer progressively diminishes in thickness towards the ileo-cecal valve.

In the large intestine the muscular coat becomes progressively thicker towards the rectum, where it eventually becomes the vigorous internal sphincter. The mucous membrane is more loosely attached, is thinner and less glandular than in the small intestine. Moreover, the colon is in part extra-peritoneal; and, normally, the contents, being less liquid than in the small intestine, do less easily escape when the bowel is punctured.

These are anatomical reasons, in themselves quite sufficient to account for the relatively lower death-rate after wounds of the stomach and large intestine.

I doubt if the chemical and bacteriological factors enter very largely into this problem. Extravasations from the colon and ileum may be of a more infectious nature than from the jejunum and stomach, as has been asserted; but the study of a very large number of cases convinces me that nearly all extravasations are fatal. Stomach wounds with extravasation are fatal; without extravasation they are not. The same is true of wounds of the small intestine; but extravasation follows most small intestine wounds; it does not follow most stomach wounds.

The hemorrhage from penetrating wounds is frequently very considerable, especially from the mesentery and liver; but there were very few cases in which any hemorrhage was the obvious and immediate cause of death. Of nineteen cases with free hemorrhage into the peritoneal cavity, eleven died, but nine of these cases were complicated by serious wounds of the viscera. In two only could death be directly attributed to hemorrhage. The reason for this present low death-rate from hemorrhage lies in the fact that in most cases the bleeding is early checked by operation.

Wounds of the liver and spleen are not usually followed by fatal hemorrhage, but from wounds of the kidney the mortality has been high of recent years. The Civil War statistics put it as low as 66.2 per cent.; but it seems as though this must be inaccurate to-day.

Wounds of the kidney have been thought to call for nephrectomy. In view of this sentiment, a recently reported case by Tiffany, of Baltimore, is interesting. It was that of a man shot through the left lumbar region. The kidney and spleen were perforated, but the bowel was intact. Tiffany opened the abdomen in front, put a stitch through the bleeding spleen, tamponed the kidney and cleared out from the abdominal cavity a considerable amount of free blood. The patient made a perfect recovery without a permanent urinary fistula.

After the accidents the lapse of time at which most of these cases were seen did not vary much. Treatment began, as a rule, in from one to three hours. The longest time which elapsed was seventy hours; up to which time the patient refused operation, which was urged. In this case perforations were discovered by forcing air through the gut, submerged in water. A general peritonitis existed, however, and the man died.

Most of the fatal cases were brought in in a state of shock or collapse, and died in a few hours. According to the records but two fatal cases were not in collapse on their entrance.

The great majority of these cases of collapse were not due to hemorrhage, but to extravasation. What is the nature of the shock in these cases and why are they so invariably fatal? As has been stated before, not a single case of extravasation survived, whether or not operated upon. The constitutional disturbance is nearly always immediate and profound; but I believe the causes are too obvious to permit the use of the term shock. The action of the poured out chyle and feces seems very similar to what takes place after the old-fashioned catheter chill. As with it, the process seems to be an acute infection. The absorptive powers of the peritoneum are much greater than those of the urinary track, and the complete systemic toxemia is immediate and profound. Usually this takes place from very slight soiling of the peritoneum, and calls for the promptest surgical relief. These are cases in which any delay is most dangerous. It would seem that the normally protected peritoneum only is capable of absorbing the septic material; for in that case of the boy wounded by a hay-fork the extravasated feces came in contact only with the cold and exposed peritoneum outside the abdominal cavity. In that case no peritonitis ensued and this patient recovered. A wound of the gut without extravasation is not dangerous. An extravasation without general peritoneal soiling is equally harmless.

In support of these propositions various pathological surgical conditions are in evidence. We know how trifling a matter it is to open the bowel for artificial anus, and how the encapsulated abscess of an appendicitis ceases to be dangerous when drained.

To carry the comparison farther, as others have done, we know the frightful and familiar symptoms which almost immediately develop after perforation of the appendix free in the abdominal cavity; and the high mortality following that event. Exact statistics of the mortality in that condition are difficult to obtain from the complicated nature of the case; but reliable operators place it very near 100 per cent.

This series of cases, with the results obtained therefrom, seems to bear out the modern teaching, that in all cases of doubt we should operate. If there is hemorrhage or extravasation, they must be checked; if not, no harm will have been done.

A few exceptions may, of course, always be found to prove any such rule. For instance, last May a man entered the hospital twelve hours after the accident, having been shot high in the epigastrium. He was distended, tender; vomited; was dull on percussion in the flanks. He was not operated on. After twenty-four hours he began to improve, and eventually recovered. Here was doubtless a case of perforation of the stomach, with hemorrhage, which was not excessive. I think there could have been no extravasation. It was just one of those cases in which one need not wonder at the recovery.

Another case of unusual importance last December was that of a man who was shot through the epigastrium. He was in excellent condition on entering the hospital. He had vomited blood before his entrance. One hour after the accident abdominal section was done. Free blood was found in the abdominal cavity. The mucous membrane of the stomach was seen pouting through a hole on the anterior surface of that organ. The posterior wall was also wounded. There were two holes in the jejunum, four in the ileum and two in the mesentery — ten in all. These were repaired and the abdomen flushed and closed with drainage. For four days the man did well apparently; but by the sixth day marked general sepsis had developed, and he died on the eighth day. At the autopsy no previously unobserved visceral injuries were discovered. Of all the cases which survived operation to die of sepsis, this man lived the longest.

Most writers on this subject give the old classical symptoms by which these lesions are to be determined; but for us to-day these symptoms are almost valueless, because they refer commonly to several days after the accident, when peritonitis and other complications have fully developed. In our experience we do not care for these evidences of advanced disease. We see our cases early and must act at once. We do not care to distinguish between lacerated, contused, incised or punctured wounds. The fact of perforation is enough. Nor do we differentiate between lesions of the duodenum, jejunum, ileum and colon. The books also tell of feces and worms seen at the external opening, of emphysema, of bloody vomiting and bloody stools, of secondary shock and fecal fistulæ. Most of these things are late phenomena. We wish to act before they have a chance to develop.

The differential diagnosis between wounds perforating or not perforating the intestines remains as difficult as ever, prior to operation. The symptoms of collapse and shock do not necessarily indicate perforation. Vomiting means nothing. It is seldom bloody, even when the stomach is penetrated. Pains may be localized or general, or not present. Pain at the umbilicus is by no means so common as some writers say. It is rare, and is as illusive as the so-called McBurney point in appendicitis. The use of gas insufflations is quite commonly pronounced dangerous. In many cases extravasation has been caused when none previously existed. The temperature and pulse, too, are of little value. The temperature is usually normal or subnormal. With fatal perforation the pulse may be slow and full. A rapid and feeble pulse may exist without serious internal damage. Hematuria is uncommon, as injuries to the kidneys, ureters and bladder are rare. Bloody dejections are still rarer. They did not occur in one of these thirty-eight cases. Of course, fecal extravasation through the parietal wound would settle the diagnosis; but that did not occur in this list of cases.

We must return, then, to our rule: When in doubt, operate. And, as has been abundantly proven, in no case has this procedure diminished the patient's chances of recovery.

There is not much that one can add in regard to recent improved technique. The general rule must be resection when necessary, with the end-to-end suture — the value of Murphy's button is still *sub judice* — and stitching up small punctured wounds.

When there is great distention with gas or feces I believe that free incision of the bowel with evacuation, as urged especially in a recent paper by S. J. Mixter, might prove of great benefit. It has done so in cases of acute peritonitis.

The prognosis in penetrating wounds must depend on conditions already described in detail; extravasation being the one important factor, with death the almost inevitable result.

The following table shows the high mortality when extravasation exists, as well as the relative mortality in gunshot and stab wounds:

GUNSHOTS (19).

	Died.	Recov'd.
Operation	6	3
No operation	6	4
	12	7
Extravasation, { operation, 5 no operation, 4 }	9	0

STABS (19).

	Died.	Recov'd.
Operation	3	16
No operation	0	0
	3	16
Extravasation, { operation; extravasation was altogether extra-abdominal, }	0	1

To sum up this paper in brief:

Gunshot wounds show a much higher mortality than stab wounds; but those stab wounds which penetrate the viscera show a mortality equally high.

Wounds of the small intestine are usually fatal. Wounds of the stomach may be survived.

Explore all doubtful cases. This is the course of least danger.

[illegible] THE TABLES OF MORTON AND MARKOE.

Barring hemorrhage, early death after the accident is not from shock but sepsis; because,

Finally, this is seen only when the fatal extravasation takes place.

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THREE CASES OF LAPAROTOMY FOR PENETRATING WOUNDS OF THE ABDOMEN,

WITH A REPORT OF 56 CASES OF PERFORATING ABDOMINAL WOUNDS OTHER THAN GUNSHOT WOUNDS.[1]

BY CHARLES L. SCUDDER, M.D.

[The 56 cases have been tabulated from literature since the tables of Morton and Markoe, including the past five years; and I wish to thank Dr. H. A. Lothrop for the collecting of material on which this tabulation is based.]

CASE I. A woman, twenty-five years old, entered the Massachusetts General Hospital two hours after having been stabbed in the abdomen. Her general condition was excellent, but for considerable shock. Examination found a wound one and one-half inches long, four and one-half inches below the umbilicus and three and one-half inches from the anterior superior spine of the left ileum. Six inches of omentum were protruding from the wound. The omentum was tied off with a double silk ligature, and the part external to the peritoneum was removed. The stump of the omentum was returned to the abdominal cavity, having been previously cleansed with boiled water.

A careful examination of the neighboring coils of intestine found no injury. A sponge carried well into either loin returned dry. No irrigation was used. The wound was closed with interrupted sutures of silkworm gut. The woman made an uninterrupted recovery.

About six weeks after the operation, and after apparent recovery, having been discharged from the hospital, she returned to the hospital presenting a tender mass in the left side of the abdomen; walking slightly bent over to the left side and with a temperature of 102° F. Rest in bed and the application of poultices resulted in a fall of the temperature to normal and the subsidence of the pain. The mass diminished in size, but remained present when the patient was again discharged, since which time she has not been seen.

This case is interesting in that it occasionally happens that after ligature of a portion of the omentum and its removal, one finds inflammatory disturbances in connection with the omentum stump. Dr. Bull,[2] of New York, has reported cases in which he has had similar experiences following partial excision of the omentum in cases of hernia, and has emphasized the importance of a recognition of this condition.

CASE II. A man, twenty-two years old, entered the Massachusetts General Hospital shortly after having been stabbed in the left hypochondrium, three fingers' breadth from the umbilicus. The wound, as indicated by the probe, passed obliquely through the abdominal wall. The man was in good condition, and presented no marked constitutional disturbance. The wound was carefully explored and enlarged. The epigastric artery was found cut and bleeding, and the opening into the peritoneum was one inch in length. No blood was found in the abdominal cavity. The left belly of the rectus abdominis was nearly divided. The epigastric artery was ligated. No irrigation was used, and the abdominal wound was closed with silkworm-gut sutures. The man made a good recovery.

CASE III. A woman, twenty-eight years old, entered the Massachusetts General Hospital three-quarters of an hour after having been stabbed by a stiletto, four fingers' breadth from the ensiform cartilage, from the umbilicus and the left costal cartilages. The wound was half an inch in length. There was considerable shock and evidences of intra-abdominal hemorrhage. The wound was carefully explored and enlarged. The omentum was found intact. The bowel was found intact. The abdomen contained considerable blood, so that it was difficult to determine the source of the hemorrhage. The abdomen was irrigated with warm, sterile water until the return water came nearly clear. It was then found that the left lobe of the liver had been wounded. This was the source of the hemorrhage, which now had ceased. The liver wound was cleansed and sutured. The abdominal wound was closed with interrupted silkworm sutures. The woman made an uninterrupted recovery.

In Morton's group of 79 cases, the liver was wounded nine times; and of these nine cases in which the liver was wounded, four died. There are three methods of treatment of wounds of the liver in vogue, each directed to checking hemorrhage: The use of the actual cautery, the use of sutures, the use of a tampon.

Of the 56 cases of perforating wounds of the abdomen here tabulated, 9 cases died and 47 cases recovered, making a mortality of 16 per cent. Morton reports 79 cases with 31 deaths, a mortality of 39 per cent. Markoe reports 54 cases with 8 deaths; a mortality of 14.8 per cent. Such mortality-rates are of very little importance or interest unless the individual cases are carefully studied.

The causes of death in the cases tabulated were as follows:

A wound of the colon, not detected; death from peritonitis.

Wounds of the small intestine, not detected; death from peritonitis.

Peritonitis due to infection from a hernia of two feet of bowel through the perforated abdominal wall.

Wound of the liver, the kidney and the chest wall; peritonitis.

Two cases of wound of the spleen, death from hemorrhage.

Gangrenous hernia through the abdominal wall; peritonitis.

Stab in a pregnant woman; hernia of the bowel, great shock, abortion, peritonitis.

Secondary infection from an abscess forming in the track of a pitchfork handle which entered the scrotum, followed the abdominal wall and entered the peritoneum in the hypochondrium.

The table shows a second case of empalement on the handle of a pitchfork, which entered the scrotum, passed up the abdominal wall and entered the general abdominal cavity. Recovery resulted in this case because of the early interference by thorough cleansing of the entire wound, which was found to be septic.

From a study of the cases here tabulated, the following would seem to be reasonable conclusions:

Given an abdominal wound, proof of penetration through the peritoneum should be sought. This is best accomplished by enlargement and careful investigation of the original wound.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, May 1, 1895.

[2] Annals of Surgery, vol. xvii.

Penetration having been found, immediate enlargement of the wound should be made for careful exploration of the abdominal contents.

Irrigation with warm salt solution should be employed if there is any soiling of the peritoneum, and if there is much blood present.

The use of the probe to determine penetration is often misleading and may give a false sense of security.

The absence of shock does not prove the presence of grave intra-peritoneal lesions.

A small parietal wound is not incompatible with grave intra-peritoneal injuries, as is evidenced by Case 47.

The possibility of intra-peritoneal strangulation through the wounded omentum must be kept in mind. Dennis, Morton and Markoe each report a case of intra-peritoneal strangulation associated with the conditions resulting from a stab.

The objects of a laparotomy following intra-peritoneal stab wounds of the abdomen are, to discover (if present) and check intra-abdominal hemorrhage, to close perforations of viscera, to prevent peritonitis and sepsis.

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Clinical Department.

PYELO-NEPHRITIS; NEPHRECTOMY; RECOVERY.[1]

BY S. VALE GOLDTHWAITE, M.D., BOSTON.

SOME of the special points of interest in the following case pertain to the widely differing opinions of several most able and experienced men relative to diagnosis, as the history of the patient will demonstrate, thus exemplifying how easily the best among us are sometimes misled.

I think, also, the history of the case would seem to suggest a greater dependence and reliance on surgical measures — more promptly applied — than on medical, dietetic, hygienic or any other mode of treatment.

Mrs. R., age thirty-eight. Four children. On Labor Day, September, 1892, felt sudden pains in left side, extending across the back; great soreness, tenderness and stiffness over the latero-dorsal region; muscles contracted; body curved inward laterally; could not lie down. Was very sick, and confined to bed two months. Pain more or less constant, and demanding morphine. During this time the patient lost much in flesh, but regained her usual weight during the following summer while in the country.

Her attending physician — a very able practitioner — diagnosed inflammation of the bowels, with typhoid fever. Patient continued in a fair degree of health, with occasional recurrence of pain in the side and back for one year.

In March, 1894, began to notice a gray sediment in the urine — most probably pus, according to later developments. Was much alarmed and troubled over this symptom — though in no pain or otherwise disturbed health — and consulted another most excellent physician, who diagnosed cystitis due to a cold. He treated her accordingly for one month. His diagnosis was wholly favorable.

Not improving, the patient then saw another doctor — the third — who treated her for congestion of the kidney, and prognosed a cure in a few weeks.

In June she visited a very eminent surgeon, who attributed her symptoms to some suppurative disease of the pelvic organs, and advised an operation for their removal.

I saw the patient on the 3d of August, 1894. The symptoms had by this time become so typical of pyelitis with renal calculus, that I had no difficulty in forming a diagnosis to that effect.

Naturally, after so many different opinions from wholly competent medical men, the patient was now in a sad state of nervous distress — I may say distrust — and it was with difficulty that she was persuaded to again undertake treatment or advice.

It is especially noteworthy, that through all the later period of her sickness, the patient's chief complaint referred to the altered condition of her water; she did *not* complain of pain or any other physical discomfort.

Her urine contained about one-sixth, by volume, of pus; which was constant, though varying slightly in degree.

A very slight fulness was discovered — though ill-defined and painless — on the left side.

No improvement following treatment, and feeling that there were indications for a more strictly surgical consideration of the case, I asked Dr. Maurice H. Richardson to see the patient in consultation. He very promptly recognized the exact nature of the trouble, but advised the continuance of medical treatment for a short time, pending a microscopical examination of the urine, although expressing a fear that surgical measures would be demanded later.

The urine was submitted to a thoroughly able expert, who reported a diagnosis in favor of cystitis rather than pyelitis.

Patient failed slowly in flesh and strength up to January 15, 1895, when the pus suddenly ceased to appear in the urine. At once the patient began to improve in every possible manner, eating and sleeping well and in the best and happiest spirits during four weeks.

Being called again soon after, I found beginning evidence of general sepsis — alternating chills and fever, a thready and rapid pulse, with a general, vague restlessness, mental and physical.

Dr. Richardson again kindly saw the patient, and had no hesitation in advising immediate removal of the kidney. Subsequently the attending physician of another branch of the family was called, who promptly concurred in every particular with the surgical advice already given.

Operation was done on February 27, 1895, under the kindly and most valued supervision of Dr. Maurice H. Richardson. Chloroform anesthesia, most skilfully administered by F. P. Batchelder; assistant, Dr. F. A. King. Also present, Dr. Brewster, Dr. Bond, Dr. Miles and Dr. Hill. Incision from lower border of rib to iliac crest, corresponding very nearly to the so-called Langenbeck, that being found to extend over the most prominent aspect of the tumor.

No difficulty was experienced in quickly reaching and exposing the kidney, which was found much enlarged: Length, six inches; width, five inches;

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[1] Read before the Surgical Section of the Suffolk District Medical Society, May 1, 1895.

thickness, four inches; weight, one and one-half pounds.

The separation of the kidney from its capsule was difficult and tedious, owing to strong and dense adhesions; and it was rendered the more so in consequence of the unavoidable rupture of the thin-walled mass, with copious escape of large quantities of pus, which deluged every organ in the abdomen and pelvis. Ureter and renal vessels easily reached and ligated. Comparatively slight hemorrhage. Wound cavity filled with large mass of iodoform gauze. Incision partially closed with silkworm gut.

On passing the catheter at the close of the operation the bladder was found to contain one pint of pus. I should think a pint escaped from the kidney also during the operation. In the pelvis of the kidney was found a stone one and one-fourth inches long, two-thirds of an inch wide and one-half an inch thick. The temporary arrest of the pus in the urine had been evidently due to the blocking of the outlet of the renal pelvis by this calculus.

The patient promptly recovered, with no distressing symptoms whatever — a fact which I attribute, mainly, to a most thorough and careful flooding and sousing of the abdominal and pelvic viscera with nearly twelve gallons of sterile salt solution.

In conclusion, I would offer as my humble opinion the advisability of greater care in diagnosis, earlier resort to surgery, and — other conditions favoring — the complete removal of the diseased kidney in preference to incision and drainage. Also, I should commend the lateral abdominal route rather than the lumbar, my first two nephrectomies having been done by this method successfully and without difficulty.

I submit the specimen for your inspection, together with a normal kidney for comparison as to size and shape.

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A CASE OF STAB WOUND OF THE ABDOMEN, WITH WOUND OF THE INTESTINE; PROTRUSION OF THE INTESTINE THROUGH THE WOUND; OPERATION; RECOVERY.[1]

BY GEORGE H. MONKS, M.D.

At about three o'clock in the morning of the 13th of last February, I was called to the City Hospital to attend the case of a man, aged twenty-five, who had been stabbed in the abdomen with a pocket-knife. On reaching the hospital soon after this I found the patient lying upon the accident table, with a wound, about two inches long, in the right iliac region. Through this wound protruded small intestines and a bit of omentum, making a mass of about the size of an infant's head. There was a wound in the intestine from which was exuding from time to time small amounts of liquid feces. This wound was about half an inch long, and was situated on that part of the intestine which is opposite to the mesenteric attachment. Its direction was diagonal to the axis of the gut. The exposed intestines were much injected, and were glued together by exudation. There had been a moderate hemorrhage only.

The man's general condition was fairly satisfactory, considering the nature of the injury. He was very pale and restless. The pulse was about 100, and moderately strong. I was told that he had been stabbed by another man about three hours before I saw him; and that the bowels had protruded soon after the injury, and had remained in that position.

After the patient was etherized, the bowels were carefully cleansed with warm sterile water, and the intestinal wound sewed up with interrupted Lembert sutures of fine silk. The abdominal wound was then enlarged upwards and the gut and omentum gently pulled down and examined. After the whole mass had been again irrigated, it was returned to the abdominal cavity. The abdominal wound, which was then seen to be somewhat jagged, was trimmed and stitched up with three layers of silk sutures, and a firm bandage was applied.

The temperature on the evening of the first day after the operation was 100°; after this it sank to normal, where it stayed until the evening of the fourth day, when it rose to 101°. After this it rapidly came down to normal, where it remained. The pulse just after the operation was 124, and on the next evening 136. Its frequency then gradually lessened, and it remained within normal limits during the further progress of the case.

The bowels moved of themselves on the second day, after which there was a daily movement nearly every day, an enema being occasionally called for.

For the first three days the man was fed almost entirely by the rectum, and nourishment by the mouth was begun on the fourth day.

The wound was dressed for the first time on the ninth day. Firm union had taken place, except in one spot where a small slough had formed near one of the stitches.

About five weeks after the operation the man sat up, and about two weeks later he was discharged from the hospital, with a shallow sinus, at the point where the sloughing had occurred. For this he is now being treated at the out-patient department.

The protrusion of the wounded intestine was in this case undoubtedly a fortunate circumstance, as the liquid feces which escaped from the wound in the gut did not enter the abdominal cavity. It was likewise fortunate for the same reason that no attempt was made on the part of those who saw the case at first to reduce the mass before the intestinal wound had been closed and the peritoneal surface of the bowel thoroughly cleansed.

The case seems especially interesting in view of the fact that adhesive peritonitis had already taken place around the extruded bowels to a sufficient extent to cause their agglutination, while they were still outside of the abdominal cavity.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

Regular Meeting, Wednesday, May 1, 1895, Dr. M. H. Richardson in the chair.

PENETRATING WOUNDS OF THE ABDOMEN.[1]

Dr. James G. Mumford read a paper with the above title.

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[1] Case reported at the Surgical Section of the Suffolk District Medical Society, May 1, 1895.

[1] See page 81 of the Journal.

DR. G. H. MONKS showed and reported

A CASE OF STAB WOUND OF THE ABDOMEN; WOUND OF THE INTESTINE; PROLAPSE OF THE BOWEL THROUGH THE ABDOMINAL WOUND; OPERATION; RECOVERY.[2]

DR. M. H. RICHARDSON reported

A CASE OF GUNSHOT WOUND OF THE KIDNEY.

DR. C. L. SCUDDER and DR. H. A. LOTHROP gave

A RÉSUMÉ OF CASES OF PENETRATING WOUNDS OTHER THAN GUNSHOT WOUNDS, UP TO DATE.[3]

DR. A. T. CABOT said that he had had five cases in which operation had been done for penetrating gunshot wounds of the abdomen. In two of these he was present as consultant, and in three he had operated himself. Both of the cases he saw in consultation died, and of his own three cases two died and one recovered.

The first fatal case was that of a young Italian, shot a number of hours before he was seen, and operated upon at once after his arrival at the hospital. Nine or ten holes in the intestine were closed, and the abdomen was cleansed as thoroughly as possible of blood and fecal matter. The patient died at the end of about forty-eight hours, of a septic peritonitis that started from little particles of fecal matter deep among the coils of intestine, which had escaped removal.

The other fatal case was that of a boy operated upon about a month ago. He was shot just below and to the right of the umbilicus, by a 22-calibre bullet from a small rifle at close quarters. Hematuria had been noticed before operation; and from this fact, taken together with the position of the point of entrance, it was thought that the bladder was injured. The symptoms were those of hemorrhage and shock, and the operation was done upon his entrance to the hospital, five or six hours after the shooting. Two openings in the bladder and eight in the intestine were closed. The boy rallied somewhat under stimulants, but died of shock at the end of about eighteen hours.

In both of these cases partial resections of intestine were done upon coils so riddled with holes as to make this seem the quicker way of disposing of them. The resection was done by an end-to-end suture.

The case of recovery was that of a young man shot with a 22-calibre revolver at close quarters just after a heavy supper. He vomited largely, and no blood could be detected in the ejecta; but the stomach was found perforated by the bullet, which had made so small a hole that no extravasation of contents had taken place through it. The opening was sutured and the recovery uneventful. In one other case in which the stomach was wounded after a full meal, Dr. Cabot found a slight staining of blood in some of the later vomitus.

Besides these cases of gunshot wounds, he said that he had had three penetrating stab wounds, none of which perforated any of the viscera, but all of which got well after an exploration and cleaning out the blood-clots.

He said that he had no reason to change the opinion expressed by him in a paper before this Section four or five years ago in regard to the great importance of always opening the abdomen in the case of penetrating wounds. If the intestines are not injured, he did not think that enlargement of the opening through the abdominal wall added at all to the danger, while, of course, if injury to the intestines has occurred, the opening and repair of that injury adds greatly to the chances of recovery.

At the time of his previous paper, Senn's method of discovering whether a perforation existed or not by the use of hydrogen gas, was in vogue, and he then gave his reasons for not liking that method as a surgical procedure. Since then he has seen no reason for changing this opinion, though he has used one part of the manœuvre with advantage, namely, when the abdominal wall has been widely opened, after sewing up all of the wounds of the intestines, a little gas in the coils of intestines which can be pressed forward from coil to coil, assists in making a complete search for any possible opening which has been overlooked.

In conclusion, he said that these cases, when they die after complete closure of all the openings, usually die of septic peritonitis starting from the infection of the peritoneum by the bowel contents which have escaped into it. It seems to him, therefore, very important that the thorough irrigation of the peritoneal cavity with a warm salt solution should be practised, in order to thoroughly remove such foreign matter, by a method which will be searching and yet will involve as little irritation to the peritoneum as possible.

DR. J. W. ELLIOT: I have not had time to look up all the cases I have had. I can remember five cases I have had of penetrating wound.

In one case I operated for Dr. Cabot when he had a lame hand. In that case we sewed up six or eight holes in the small intestine, and as the patient was getting rather shaky and no more holes apparent, I stopped the operation; at the autopsy I found I had missed two holes in the large intestine, and that there was a big hemorrhage post-peritoneal. The patient evidently died from septic peritonitis from the holes that were not sewed up.

Another case I operated on about three days after the shooting, and the peritoneum was already gangrenous and septic. That patient died at once.

In the third case, the bullet had torn the liver badly, had opened the small intestine in three or four places, and had injured either the aorta or a branch very near the aorta. The hemorrhage was terrific, but was finally stopped, and the liver laceration was packed with gauze. That patient died.

Another case, gunshot wound of the stomach, recovered promptly; but the interesting part about that was that, although I found a hole in the front of the stomach, I never could find a hole in the back of it. The hole was sewed up and the boy recovered.

The last case I had last summer. This was a man shot in the right side just below the ribs, just to the right of the median line. The bullet cut off the epigastric near where it anastomoses with the internal mammary; it grazed the liver, made a groove in it and went above the right kidney. The abdomen was full of blood, and I thought at least the aorta was torn, but on making the opening larger and larger, looking for the source of hemorrhage, I found it all came from the artery in the abdominal wall, the epigastric. In searching for the wound I had opened the abdomen from the ensiform cartilage to the symphysis pubis, and no laceration of the intestine was found. The hole just above the right kidney I packed with gauze and left the end out. The rest of the abdomen I sewed up. The man recovered promptly. He had hematuria a day or two, but that disappeared. I sent a telegram to him to-day to come here, but his wife informed me that he died of phthisis a short time ago. The stomach injury and that are the only penetrating wounds that recovered in my experience.

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[2] See page 87 of the Journal.

[3] See 85 page of the Journal.

So far as the general treatment goes, Dr. Cabot thinks that washing out is important. I am very much afraid of washing out where there has been any extravasation, afraid of diluting it and carrying it into corners where you cannot get at it. I have pretty much made up my mind to wipe out and leave strands of gauze in doubtful cases.

DR. H. W. CUSHING: I have no personal experience to warrant me in speaking. I wish to express my gratification at hearing these very interesting papers. There have been one or two cases communicated to me of a kind which I do not think has come under discussion to-night. One was a case in which a physician was sent for to a girl who had shot herself accidentally with a pistol. He found hematuria, opened the abdomen, and removed the kidney. The ball had gone through the kidney. She made a good recovery. The other was in Galveston, where a man was stabbed in such a way as to injure the bladder. He had been drinking beer; the bladder was pretty high up. Laparotomy was performed, and the bladder was sewed in such a way as to leave a drainage-tube in it, but to shut it off from the abdominal cavity. The abdominal cavity was well washed out; he recovered.

In regard to the question of flushing out the abdomen when it is presumably infected by septic material, it is a very difficult question, and I have had some experience in that line. I have about made up my mind, as the last speaker intimated, that if there has been really septic material in the abdomen either from injury of the intestine or a collection of pus which happens to be virulent, that the washing out does not save the patient. The principal advantage of washing out which I use very largely, is to remove matter (little clots, contents of cysts, tubes, and other things) which is going to decompose if left in there; but when really virulent material has got into the abdominal cavity, it has frequently failed to give me the satisfaction that I had hoped for from it.

DR. LOTHROP: Statistics show that after abdominal stabs, herniæ of the omentum are very common, and the conditions often demand partial removal of protruding omentum. It seems to me Dr. Scudder's first case brings up a point of extreme interest, namely, the occurrence of inflammatory processes in the omental stump, coming, as a rule, late after the operation. About two years ago, Dr. Bull first called attention, in a report of cases, to the occurrence of this inflammatory process coming on after the abdominal wound had healed and the patient was apparently going to have an uneventful recovery. These cases, something like six or seven I think, showed no trouble whatever before the latter part of the fourth or sixth week up to the sixth month, the abdominal wound being perfectly closed, one case having no trouble whatever until six months had elapsed. Some of them recovered perfectly by simple expectant treatment with local applications; others went on to suppuration. From one of these abscess cavities there was a pint of pus evacuated, and in that pus cavity was found the ligature which had been applied previously to the omental stump.

As regards the symptoms of these cases, they varied according to the degree of inflammation, and to the time at which they appeared after the primary operation. Most of the pain and tenderness was in the umbilical region, and in many cases there were tumors to be felt. The causes of these symptoms were due to sepsis; he was inclined to think that the tying of large masses of omentum in one ligature, or a large mass in two ligatures in the form of a chain, and leaving considerable omentum distal to the point of ligature, the result is that the consequent necrobiotic process interferes with nature's taking care of a few germs which may have been left there, and there results a slow, chronic suppuration that may go away of itself or result in abscess formation, calling for surgical interference. He lays down as a rule that in amputating portions of the omentum the chain ligature should be used, including a large number of links, that the omentum distal to the ligature should be left as near the ligature as is consistent with safety, and that individual arteries should be tied separately so as to prevent hemorrhage, which is occasionally a serious complication.

In reply to an objection by Dr. Cushing, DR. CABOT said that he did not believe that it was proper to think of irrigation of the peritoneal cavity in cases where local septic processes already exist, but that in these cases when seen early and when the septic process had not started, and the problem is to remove a great amount of clotted blood with a certain amount of fecal matter mixed with it in as thorough and unirritating a way as possible, he knew of no better way than by irrigation with a bland solution. He did not think it necessary to remove aseptic blood in this thorough manner, but did think that blood mixed with fecal matter should be so removed.

DR. HOGNER: I have had three cases of penetrating abdominal wounds in my practice.

One case was that of a boy twelve years old, who was shot by a revolver of small calibre, the bullet wounding the liver. The bullet penetrated the skin a little below the ensiform cartilage. The wound of exit was not discovered. I saw the case three weeks after the accident. There was an abscess as large as a peanut, and some local peritonitis. The abscess was opened, and the canal sounded so deep that there was no doubt that the bullet had wounded the liver. The treatment was to give free exit to the pus. The patient recovered with the bullet in the body.

The second case occurred in a man twenty-five years old, the subject of a hernia inguinalis for which he usually wore a truss. One day he omitted this, and was shot by a small revolver, the bullet penetrating the prolapsed intestine and going down into the trousers. The patient recovered *post herniotomiam et resectionem*, etc.

The third case was in a boy eight years old, who was gliding on Swedish snow-shoes (*skidor*) which were eight to ten feet in length and three to five inches in width. In gliding the boy broke one, the point of which penetrated the abdomen in the linea alba. I saw the boy three days later, found a wound an inch long filled up by some of the omentum. The omentum was sutured antiseptically. The external part of it was cut away. In three weeks the boy was again gliding on a new pair of *skidor*.

DR. M. H. RICHARDSON: I agree with what has been said as to exploring in cases apparently hopeless. The case Dr. Mumford has shown is very discouraging; but if hopeless without operation we cannot say they are absolutely hopeless with, because the results show a certain number of them get well even if the lesions are very serious indeed. Cases that will get well without operation will get well with operation, and the exploration will enable us to repair the damage that is done. Of course, with extensive multiple wounds, especially of the small intestine, with extravasation of liquid feces, the result must be necessarily very unfavorable. I believe that the condition is very similar to the perforation of an appendix at the base near the colon — the most serious form of appendicitis. I think that the additional statistics we are getting every day in this class of penetrating wounds of the abdomen is helping us very materially in deciding what to do. There are many cases we operate upon where there is no chance whatever. If we can eliminate such hopelessly unfavorable cases, I think it is a wise plan to do so; and yet every now and then a case recovers that seems to me perfectly hopeless. I would cite Dr. Elliot's most brilliant case of resection for thrombosis of the mesenteric vessels. I remarked at the time that that was a case that would never get well; yet, no matter how severe the case may be, you may have a recovery. It seems to me the most important matter for diagnosis is the question of local signs, as in other acute abdominal conditions — distention, rigidity — no matter what the pulse and temperature may be, no matter whether there is vomiting or not.

I should like to confirm Dr. Cabot's experience with stab wounds. I have had one or two of them.

About irrigation; that is interesting to me. I thought we all agreed about that. I have always thought in appendicitis in which the general peritoneal cavity is invaded by the breaking down of adhesions, that we spread to other parts of the abdominal cavity the germ colonies.

With reference to kidneys, that in itself, it seems to me, is a subject of very great importance. I wish we could have had more experience on that subject. Dr. Elliot's case which I cited was very much like my own. He did not interfere, and the man recovered. I do not know that he knows exactly what the lesion of the kidney was. It seems to me from the diagram that I showed that nothing could have been done to save that kidney. I think the man would have died just the same.

DR. S. V. GOLDTHWAITE reported and exhibited

A CASE OF PYELO-NEPHRITIS; OPERATION; RECOVERY.[4]

DR. RICHARDSON: This case has interested me very much. The diagnosis at the time I saw it seemed clear. I dare say if I had seen the patient in the very beginning I might have had hesitation about it. The operation was a very brilliant one. I was surprised, however, that the woman did not have general infection. I think the matter of irrigation is very easily settled in this case, because the wound was so large that you could use irrigation with perfectly free exit of the water; the objection to irrigation in my experience being that the water goes into the abdominal cavity and does not come out easily, and you find at the end you have scattered in all parts of the abdomen this infected water. This opening was so large, and every organ in the abdomen was infected so that you could not make it worse, and I think that in this case the use of the sterile salt solution was one of the most valuable things done. I believe in that lateral route for nephrectomies. I happened to see one of Dr. Goldthwaite's first nephrectomies in the course of my practice. That was done by the anterior route for movable kidney.

DR. CUSHING: In what I said about irrigation I do not wish to be understood that I do not like it and use it, only that in cases where the pus is really virulent it has disappointed me sometimes. I think it is, as Dr. Goldthwaite says, the only way to do; but once in a while we will find, no matter how thoroughly we have irrigated, the patient does not get well. I am inclined to think the difference lies a good deal in the pus; in many collections where the pus has been dammed up some time, the bacteria in it die in their own poison, or else it is that the person who is carrying that collection of matter has become so saturated with it that he is vaccinated, or whatever the condition may be called, so that it no longer has that fatal effect that it will have in a fresh case. Of course, irrigation is the way and the only way to get out collections of every kind. I only meant to say that it disappoints us sometimes in cases of fresh pus which is virulent.

PATHOLOGICAL SPECIMENS.

DR. RICHARDSON: I have here a tube removed from a young women to-day. For six weeks she had had intermittent pain. The diagnosis of impacted gall-stones and general peritonitis was made. I never suspected the true cause of the symptoms. This is the right Fallopian tube, and here a tumor situated at the right sacro-iliac synchondrosis. Here is a rupture of the tube. What the origin of the rupture is I don't know. The point in the case seems to me to be in the diagnosis. I never was more amazed in my life than to see the bulging dark peritoneum and a copious discharge of blood from this abdomen. The girl was unmarried; and presumably the common cause and pain, hemorrhage and rupture was not present. Another interesting thing connected with the case is that the diagnosis of acute obstruction was correct. The small intestine was caught in that growth; if it is an ectopic gestation, the small intestine was so caught and bound down by the growing placenta after the first rupture six weeks ago that there was a sharp bend in the intestine, and beyond the bend the intestine was like a tape-worm. Above it was distended to the size of a Bologna sausage. The coils which distended this young woman's abdomen were not probably more than a yard long, and everything else in the abdominal cavity was collapsed. In this case I did not wash out because there was no evidence of sepsis, and I do not believe in washing out except in a very general infection — the chief danger in washing out being converting a local into a general infection in localized abscesses.

DR. ELLIOT: I should like to hear some more discussion on washing out. This case reminds me of a case of extra-uterine pregnancy which occurred last year, where the abdomen was full of blood and the patient very much collapsed. I did not wash out. I tied the tube, took it out, sewed up the abdomen, and the patient recovered very promptly without washing out. So I am not sure that even after extra-uterine pregnancy it is necessary to wash out. You say you do not wash out because it is not septic; and if it is not septic, I don't see any advantage in washing out. I must say that, although I have washed out a great deal, my general tendency is getting to be to wash out less and less. In a case like Dr. Goldthwaite's, where the intestine is bathed with pus, it was natural and necessary to wash it off; but washing the abdominal cavity, as the President remarked, is quite a different question. There undoubtedly are times when washing does a great deal of good, and also I think that it does harm.

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[4] See page 86 of the Journal.

Dr. Cabot: I think if this discussion about washing out blood is directed against my remark about washing out blood mixed with feces, it is no question at all. I remember the case in which I saw a patient with gunshot wound of the liver. It was clear he had a good deal of blood in the lower part of the abdomen. He got perfectly well without trouble; the intestine was not perforated; he simply had a wound of the liver which bled down into the lower part of the abdomen. I don't see any necessity for washing out when aseptic blood exists, but when blood mixed with feces exists, I prefer to wash it out.

Dr. Richardson: I did not mean to suggest for a moment that I favored washing out in pure hemorrhage. I have never done it. I have operated twenty-one or twenty-two times after free hemorrhage, and I have not done it. I should not have washed out unless the coil of intestine had perforated, as I have seen it once before in acute obstruction, with kink in the small intestine and perforation in separating the kink. In that case I did not wash out, and I should not unless the intestines were outside of the abdominal cavity. In the long incision the intestines are outside of the cavity. I do not see that there is any difference in our theory or practice in this regard. In the collapsed intestine full of simple fecal matter, you don't get much extravasation; and I don't believe Dr. Cabot or anybody else would wash out the whole abdominal cavity unless there was a general extravasation of water mixed with feces or blood mixed with feces, a condition which you cannot make any worse by washing out. On the other hand, I think this is the practice of all the surgeons operating on appendicitis — if you have a gangrenous appendix surrounded with perhaps an abscess collection as large as an orange, you drain, wash out your abscess cavity; but if the opening is not more than two or three inches long, I don't believe one would put in irrigation fluid under pressure, for the reason that you spread into uninfected regions the infecting fluid. The fatal case in my experience of extra-uterine pregnancy with rupture, was precisely like the case to-day — enormous hemorrhage, cavity filled with blood, dark in color, liquid; the operation was done in such haste that the preparations were not as perfect as they should have been, and I think blood-serum is the best of culture media to get infected. The woman died of general peritonitis. I am sure washing out would have been of no use there.

Epidemics of Typhoid Fever have lately been traced in Calcutta and Bombay to the use of water-cress which grew in soil polluted by sewerage.

AMERICAN SURGICAL ASSOCIATION.

New York, May 28, 29 and 30, 1895.

(Continued from No. 3, p. 70.)

CLINIC AT THE ROOSEVELT HOSPITAL.

Dr. Charles McBurney heartily welcomed the members of the Association, saying that he had never expected to see such a distinguished assemblage in that hospital.

Dr. Lange presented two cases of suppurative affection of the middle ear. The next case was that of a man with tubercular disease of kidneys, bladder and prostate, in whom it was found necessary to extirpate the kidney. Another was a woman with disease of the ureter, after the removal of which she gained 40 pounds. He also offered a case in which two tumors of the broad ligament had been removed, since which the patient had gained 130 pounds. The last case was a patient with tuberculosis. She had been to many hospitals, and the diagnosis of carcinoma had been made by reason of the numerous small masses scattered around all over the surface of the breast. The whole bottom of the breast was removed, the operation being a great success.

Dr. Fowler showed a case of dissection of the extensor tendon of the middle finger of the left hand, which had been torn loose from its apeurotic structures while playing a violin. After operation the patient was able to return to his vocation as a professional violinist. The second case was one of rupture of the tendo-Achillis, which was sutured five months after the accident, as a result of which the patient was able to walk without a perceptible limp. The third case was a man seventy-one years of age, who had ruptured the patella attachment of the quadriceps extensor of one leg, and six months later met with a similar accident in the other. The speaker sutured the muscle, the functional result being excellent and union perfect. The next case was a man who had suffered thirteen years with facial neuralgia, upon whom a successful operation was done for its relief. There was also exhibited a little girl who had suffered from a deformity of the auricular appendages, which was remedied by transplantation from one side to another.

Dr. Rushmore was the next speaker. The first case was one in which the deformity of the head drawn down to one side was remedied, and the next was one in which complete dislocation of the right knee had occurred. Upon admission the latter patient complained of severe pains in the hip, and on opening the joint the dislocation was reduced. Shortly after, however, there was a displacement, and a second operation was necessary. At present he has a perfectly useful limb and has all the motions of the hip-joint, there being but one and a half inches of shortening.

Dr. Charles McBurney produced the case of a gentlemen who had been thrown from his horse while hunting, the horse falling on him. The bladder was forced far out of position, and a large incision was necessary in order to locate it. It was found that an extensive fracture of the pelvis had also occurred, and the entire pelvis was filled with urine and extravasated blood. At the present time every one of the fractures have united, and the bladder has resumed all its functions, it being possible to pass a No. 29 without any trouble.

The next patient, Dr. Lambden, of New York, illustrated the results of operation for malignant disease of the left tonsil. The tonsil and all the adjacent tissue was removed, including a piece of the soft palate. The patient has remained entirely well since the operation.

The third case was a young lady who had been operated on for a spindle-cell sarcoma at the lower end of the radius, and in whom a part of the radius was removed.

The next case was that of a boy who had suffered from the effects of a 32-calibre ball having entered the thigh behind the femur. Ten days after the accident a pulsating tumor was noticed in the popliteal space, which was dissected out, and primary union took place, since which time he has had complete flexion.

The fifth patient had received an injury similar to that of the previous case, that is, rupture of the quadriceps extensor, and about eight months afterward he ruptured the extensor on the other side. The same operation was done in both cases, with primary union and complete restoration of functions.

The next patient had been operated on in December, 1893, for ostitis of the lower jaw, the case being interesting by reason of the spiral spring which had been inserted to prevent deformity.

The next case illustrated the result of operation for recurring appendicitis. The speaker stated that he had operated on thirty cases of this disease, no patient having as yet died. One of the principal points is the small opening that is made in the operation, a large opening being considered unnecessary.

The last case presented was very similar to the preceding. The scar in this patient was extremely small.

THURSDAY.

DR. J. S. WIGHT, of Brooklyn, N. Y., read a paper entitled

TREATMENT OF CANCER OF THE BREAST.

Dr. Wight presented seventeen cases of cancer of the breast, in nearly all of which the results from operation were very favorable, and the patients continued immune and in good health after periods ranging from one to six years.

Tumors of the breast may be divided into three kinds: (1) those which may be cured by operation; (2) those in which an operation may give temporary relief and comfort; (3) those in which an operation is impossible and inadvisable. The cardinal precept is, the earlier an operation, other things being equal, the more certain will be the prospect of a cure. The minimum of time should be taken, and the tumor, as well as its infected environment, must be removed. In the case of an incipient tumor of the breast, the entire breast must be removed. Disaster follows the neglect of this rule.

From fifteen to forty-five minutes is taken for the operation. A continuous incision is made around the tumor, including if possible all the infected tissue. Then the growth is rapidly excised, the hands of assistants following the knife to repress and control hemorrhage. Pressure-forceps are freely used on all the larger bleeding vessels. If any adjacent or subjacent portions of infected tissue remain, they are quickly cut out. In all cases the submammary fascia is removed, and the sheath of the great pectoral muscle is dissected off in front. A sterilized towel is pressed upon the wounded surface to control the oozing. The contents of the axilla are excised. The incision extends from the angle of the breast wound, so as not to expose the growth in the axilla. A pair of long-jawed pressure-forceps is pushed along the surface of the axillary growth, so as to grasp the non-infected tissue. With a knife or a pair of scissors, carried along the jaws of the forceps, the tumor is quickly cut away, leaving the forceps in place to prevent hemorrhage. This process is repeated, using as many long-jawed forceps as required, until the entire growth is cut out. The pressure-forceps are now removed from the breast wound, which is again disinfected. As a rule no ligatures are needed, the sutures, made of silk, acting as such, when applied as follows: Long curved needles are passed through the flaps, and under the entire base of the wound, and are then tied so as to bring the entire surface of the wound together. These are called deep sutures.

The treatment has consisted, for the most part, in the persistent use of bromide of arsenic. In some cases this remedy has been given for two or three years, with occasional intermissions. The dose has been one-fortieth of a grain to one-tenth of a grain, beginning with a smaller dose and increasing it. In some instances the solution of the bromide of gold and arsenic, in doses of from five to fifteen drops after meals, has been employed. These remedies are given on the theory that they are antagonistic to the infection of the disease under consideration. The carbonate of lime has been given to some extent, as an adjuvant to the other remedies, but it is of inferior value compared with arsenic and gold.

DR. ARPAD G. GERSTER, of New York, then read a paper entitled

THE MODERN OPERATIVE TREATMENT OF RECTAL CANCER,

dividing the subject into (1) the modern methods of attack employed in extirpation and the details of the after-treatment; (2) the preservation of, or substitutes for, the sphincteric function; and (3) remote sequlæ of these newer methods.

When we examine the imperfect, and therefore bloody and dangerous procedures devised by Dieffenbach, Lisfranc and Velpeau, together with the high rate of mortality accompanying the radical operations of these authors, our wonder is that any surgeon should have had the temerity to attempt the removal of an extensive rectal neoplasm. The late noteworthy revolution in the methods of surgical therapy of the rectum was based upon an accidental observation made by Volkmann in 1883, who, in removing a periosteal sarcoma of the sacrum, accidentally opened the sacral canal. The patient did not suffer any serious damage from this dreaded accident, and promptly recovered. This observation encouraged Kraske, then assistant to Volkmann, to study the question; and, as a fruit of these studies, appeared his remarkable publication in 1885, advocating the excision of the left half of the lower portion of the sacrum up to the third sacral foramen, thus enabling the surgeon to approach the gut from behind and attack a large number of tumors from above. The relative position of colotomy was changed in two ways. The number of colotomies, done as a purely palliative step, steadily diminished, being limited to hopeless cases; but this operation is also used where a satisfactory cleansing of the large gut is rendered impossible or even difficult by whatever cause, and more so preceding resection than amputation, for obvious reasons. More and more stress is laid upon a thorough evacuation and cleansing of the gut as a preliminary aseptic measure, with or without colotomy.

Kraske's procedure, done through a median longitudinal incision was modified by Heinecke, who made a T-shaped external incision, dividing the sacrum and coccyx along the lines of the external incision, thus producing two lateral triangular osteo-integumental flaps, which were to be replaced and sutured after the rectal operation was finished. This, in turn, was modified by Kocher, with a view of enabling the surgeon to divide the sacrum above the third sacral foramen without injury to the third and fourth anterior sacral nerves. Levy recommended an incision of the shape of an inverted capital U, the arc of the letter corresponding to the transverse section through the sacrum. Hegar employed a V-shaped osteo-integumental flap.

It is curious that the vagina, offering such a ready and accessible roadway to the rectum, had so long escaped the attention and ingenuity of enterprising rectal surgeons. This was suggested at about the same time by Rehn and by Campenom, a Frenchman. This method is applicable both for resection and amputation of the rectum.

Dr. Gerster also quoted a case of Dr. Frank Hartley, in which he used Mounsell's (of Melbourne) operation with success.

To preserve the sphincteric apparatus wherever possible, and not to interfere with its nervous supply by respecting the integrity of the upper three pairs of sacral motor nerves has become a generally accepted principle of modern surgery. A number of more or less successful attempts have been made to provide a substitute for lost sphincteric action. Willems, Rydygier and Witzel almost simultaneously proposed similar methods, consisting of an ingenious utilization of part of the gluteus muscle for the occlusion of the amputated and otherwise patulous rectal stump. Witzel reported six successful cases. Gerster advocated a radically different procedure, consisting in simple torsion around its own axis of the extremity of the rectal stump, followed by fixation of the twisted gut to the skin by suture. An elastic resistance to the pressure of the fecal column is thus generated, sufficient to retain solid and liquid matter until the resistance be overcome by voluntary intra-abdominal pressure. This method, being the simplest, certainly deserves the preference and extensive trial.

As to the remote sequelæ other than incontinence, prolapse of the rectum is one of these. Morestin mentions two well-observed instances of procidentia uteri directly produced by Kraske's operation. Sacral fistulæ are the bane of modern rectal surgery.

DR. L. McLANE TIFFANY said he would only discuss Dr. Gerrish's paper. He did not think Dr. Gerrish had laid sufficient emphasis upon the lymphatics. He recommended that the floor of the mouth be opened in operating on cases of cancer of the tongue. As to the amount of tissue to be taken away, of course this differed very largely with various operators, but in operating upon the breast he considered it right to take everything in the neighborhood. He said that he had had two deaths in 164 cases, one of which was due to sepsis and the other took place during etherization. He stated that local recurrence meant recurrence in the neighborhood of the scar, and a second local recurrence is the most suddenly fatal. He knew of cases that had lived ten or fifteen years with a cancer of the breast.

DR. McGRAW agreed with Dr. Tiffany, and said that he had come to the conclusion that the proper way to operate upon these cases was through the floor of the mouth. He expressed great surprise at the record shown by Dr. Wight in his paper. In his opinion, in cancer of the breast the axillary glands should be extirpated in all cases, however young.

DR. CHRISTIAN FENGER called attention to the kind of canula he employed in these cases. He said that he considered it important that when the floor of the mouth and the tongue are taken away, something in the way of a substitute should be given the patient. His method of doing this consists of turning up from the neck a flap which is sewed to the tongue, or, when that had been removed, to the mucous membrane.

DR. W. H. CARMALT, of New Haven, suggested that a great deal of the danger in these operations might possibly be avoided if a channel could be made through the trachea through which the patients could breathe.

DR. J. COLLINS WARREN showed a specimen which he had removed from a rib in an operation, which he considered to be a complete one. He thought that the operation for cancer of the tongue, should include resection of the jaw and the removal of at least half if not the whole of the tongue. He had obtained the histories of about 40 or 50 of his cases of cancer of the breast, upon which he had operated subsequent to 1880. So far as he knew, only two deaths have occurred in about 80 cases, one of which was due to erysipelas and the other to kidney failure. There were about 8 recoveries out of 29 cases, a proportion of 27 per cent. In operating on the breast, he always begins his dissection in the axilla, and makes an incision up to the clavicle, with another one at right angles to it.

DR. ARPAD G. GERSTER expressed his gratification at the comments made upon his methods of operating.

THE PRESENT STATUS OF ANESTHESIA.

Under this heading **DR. G. W. GAY**, of Boston, read a paper entitled

CIRCUMSTANCES UNDER WHICH CHLOROFORM IS PREFERABLE TO ETHER AS AN ANESTHETIC.

Under the same general heading, **DR. ROBERT F. WEIR**, of New York, read an article, the title of which was

INFLUENCE OF ETHER UPON THE KIDNEYS.

DR. T. F. PREWITT, of St. Louis, in discussing the papers, said that in certain cases of respiratory trouble chloroform was preferable to ether, but in various conditions of local trouble he thought ether was better. He considered chloroform safer in diseases of the kidney and the heart.

DR. H. R. WHARTON, of Philadelphia, agreed with Dr. Prewitt as to using chloroform. He said that he usually employed chloroform in performing tracheotomy, but at the present time he was not using any anesthetic during this operation. He considered cocaine very valuable. He called the attention of the members to the great risk of administering ether to very young children, as he had seen death follow in a very few hours in a child less than six months old.

He never uses anesthetics now in cases under six years of age, except when absolutely necessary, when he prefers chloroform.

Dr. J. D. Rushmore, of Brooklyn, stated that he had one case of death consequent upon the use of ether in a child. He considers chloroform preferable in cases in which there is trouble with respiration, as spasms, for instance. In many cases in young children it is advisable to avoid anything that will interfere with the heart's action.

In our student days it was taught that ether should be given in as concentrated form as possible, and this is but one instance of the very erroneous teaching of that time. The method Dr. Rushmore uses at present is to permit the patient to get plenty of air while being etherized; and he contended that ether should be administered with clock-work regularity, and should be given drop by drop, instead of a large quantity at once.

Dr. Robert Abbe, of New York, said he did not agree with those gentlemen who hinted that giving ether required less skill than giving chloroform. He protested strongly against using old ether, which he claimed was frequently done, and said that he had found a hypodermic injection of morphia a very good thing to give previous to the administration of the ether.

He thought that exposure of the body while being operated upon, and again while being transferred to and from the operating-room, was a very prolific source of pulmonary trouble. With respect to the anesthetic best suited for children, the speaker considered ether preferable, having abandoned the use of chloroform on children since he had one death which he thought due to this anesthetic. He said that he had relieved a stab wound of the stomach under cocaine; also, that he had done a suprapubic cystotomy under its influence, in which death would certainly have ensued had ether been used.

Dr. F. E. Lange, of New York, stated that both chloroform and ether had their indications and their contraindications, but that as long as no absolutely safe anesthetic existed, he considered ether good enough. He had lost patients under both chloroform and ether. He said that the question of an anesthetic was the only one which gave him anxiety in surgical operations, and stated that he had had two deaths under chloroform. He quoted the case of a celebrated American surgeon, who, while in a European country, attempted to establish the advantages of ether, the patient dying under his hands. Dr. Lange also mentioned the case of a man who was a drunkard and very excitable, upon whom he had operated for kidney affection, death resulting within a few minutes. He contended that chloroform was not the anesthetic to be used where there was a weak heart, but that in some cases ether was preferable.

The discussion on the

RESTORATION OF JOINT FUNCTION AFTER FRACTURE,

which was to have been participated in by **Drs. W. H. Carmalt**, of New Haven; **L. A. Sayre**, of New York; **N. P. Dandridge**, of Cincinnati; **J. B. Roberts**, of Philadelphia; **E. H. Bradford**, of Boston, and **John Ashhurst, Jr.**, of Philadelphia, was read by title.

Dr. John B. Deaver, of Philadelphia, then presented a paper upon

THE INFLUENCE OF ETHER NARCOSIS UPON THE GENITO-URINARY TRACT.

Israel examined the urine of 100 subjects having normal kidneys, before and after administering chloroform. In one-third of all cases there were deleterious effects on the kidneys, lasting two or three days, with traces of albumin, cylinders, leucocytes, kidney epithelium and epithelium of the ureters and bladder. The effect of etherization on general tissue metamorphosis, apart from any effect upon the kidneys, was shown by the effect upon the specific gravity of the urine. In 50 cases it was markedly increased, while in 13 only it was decreased.

The conclusion is, that ether has a very considerable irritating effect on the kidneys. The necessity of examining the urine of every patient to be anesthetized is to be emphasized.

The following papers were than read by title:

GUNSHOT WOUNDS OF THE HEART,

by **Claudius H. Mastin, M.D.**, of Mobile.

PERSONAL EXPERIENCES WITH MAD DOGS,

by **Dr. Basil Norris.**

THE RADICAL CURE OF HERNIA BY A NEW PROCEDURE,

by **Dr. John H. Packard**, of Philadelphia.

LIGATURE OF THE SPERMATIC CORD IN THE TREATMENT OF HYPERTROPHY OF THE PROSTATE,

by **Dr. J. Ewing Mears**, of Philadelphia.

Dr. Henry W. Wharton, of Philadelphia, then read a paper entitled

DISLOCATION OF THE ULNAR NERVE AT THE ELBOW: A REPORT OF FOURTEEN CASES.

The first case was Dr. Wharton's own, to which he appended 13 others reported by various observers. Dislocation of the ulnar nerve at the elbow is a comparatively rare affection occurring independently of fractures or dislocations of the bones of the elbow, and may result from direct violence, or from muscular effort or violent flexion of the arm at the elbow, causing laceration of the fascia which holds the nerve in its groove at the back of the inner condyle of the humerus. Zuckerkandl, in an examination of two cases of dislocation of the ulnar nerve in dead subjects, noted that the internal condyle of the humerus in each of these cases was small and the groove for the nerve shallow, and the fascia binding down the nerve very poorly developed; an unusual forward position of the internal lateral ligament was also noted.

The most satisfactory method of securing the nerve seems to be that practised by Mr. MacCormick, who exposed the ulnar nerve, and having made a bed for the nerve by dividing the fibrous structures behind the inner condyle of the humerus, fixed it in its usual position by two kangaroo-tendon loops passed through the inner margin of the triceps tendon and somewhat loosely around the nerve, several sutures being used to unite the divided margin of the fascial expansion of the triceps tendon superficial and the nerve. In all cases where the nerve was exposed and sutured in its normal position, the result was satisfactory. In no recorded case has neuritis developed as a result of operative treatment.

(*To be continued.*)

THE BOSTON

Medical and Surgical Journal.

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CHOLERA IN ENGLAND IN 1893.[1]

The recent report presented by the Local Government Board of England upon the limited outbreaks of cholera which occurred in England in 1893, contains very much that is instructive upon the subject, and will be welcomed by American health authorities as showing efficient means of dealing with the disease when it once appears in any community.

It shows clearly how liable any inland district is to invasion by cholera, however great the precautions taken at ports of entry may be. Fortunately, it also shows how little such outbreaks are to be feared, if proper steps are taken for isolating the disease in the districts attacked, and for the protection of the public and private water-supplies.

The report also corroborates the suspicions which have lately been entertained as to the spread of disease by shell-fish, which have been fed upon sewage. Dr. Thorne, the chief medical officer, does not express a very decided opinion on this point; but very strong reasons are presented for suspecting that cholera was spread in 1893 by this means. A very large part of the cases which occurred in that year can be traced to Grimsby, a town on the East Coast of England to which cholera had been imported from the Continent. In the six months from May to October, 1893, nearly a quarter of a million excursionists were booked to this place notwithstanding the well-known fact that cholera prevailed there, and in many instances the disease was proven to have been thus conveyed back to the interior towns. Fortunately, the infection did not gain access to the public water-supplies.

It is stated in the report that "the antecedent history of the sick in several instances involved either the consumption or the reception at their homes of oysters or other shell-fish which had been procured from the seacoast towns of Cleethorpes or Grimsby." Hence a medical inspector was instructed to report upon the trade in shell-fish as conducted in those places. He found that "not only were the oyster-beds at Cleethorpes almost necessarily bathed at each tide with the effluent from the Grimsby and Cleethorpes sewers, but that oysters were so stored inside the Grimsby docks as once again to expose them to contamination with sewage. Mussels and cockles are still more exposed than oysters." Cholera had lingered at each of these places long enough to render their sewage a very likely medium for the spread of infection. Dr. Thorne states that he cannot avoid the conviction that "shell-fish from these two towns must in some cases remain under suspicion as having contributed to the diffusion of the disease."

One of the most "terrible warnings" to be found in this report is that of Ashbourne in Derbyshire, a place whose "sanitary traditions are eminently unsatisfactory." One particular well in the yard of the "Coach and Horses Inn," had incited criticism as being sunk close to a urinal attached to the public-house, whence there was soakage "through the unpaved and unprotected yard above the shallow well." The Local Sanitary Board saw no danger in this state of things, and considered that "their town was as well supplied with water as the majority of other towns in the country." They were subjected, however, to a rude awakening in September, 1893, when, on the sixth of that month, a very severe and fatal outbreak of cholera began in the back-yard of this inn, and "in seven days, out of a total of 39 inhabitants living there, there were no less than 15 cases of cholera with nine deaths." This outbreak would undoubtedly have become much larger, if the well had not promptly been filled in with quick-lime. The inn was one of the cheaper sort where lodgings were to be had for fourpence to sixpence a night. Its lodgers were largely nomadic people, one of whom had probably brought the infection with him. The case is instructive as showing the rapidity with which cholera can be conveyed by means of an infected water-supply, and with which it can be stamped out when the infected supply is discontinued.

The report contains the statements of fifteen medical inspectors upon the infected districts. One of them presents an account of a fatal case of cholera which occurred in the person of a woman whose duty it was to clean a portion of the rooms at the House of Commons in London, together with the mode of disinfecting these apartments.

The volume is fully illustrated with maps of the infected district, photographs and bacteriological cuts illustrating Dr. Klein's investigations upon reputed cholera material submitted to him for investigation.

The two photographs of the back-yard of the "Coach and Horses Inn" are especially instructive as illustrating the presence of peculiarly unsanitary conditions.

The report is especially interesting in its bearing upon the spread of disease by means of shell-fish and calls to mind the recent epidemics of typhoid fever at New Haven and Amherst, said to have been caused by partaking of raw oysters from Long Island Sound to which sewage had access. The methods of infection in cholera and typhoid fever are identical, the principal difference consisting in the greater rapidity of the spread and the consequent greater multiplication of cases in a short time in the case of cholera as compared with typhoid fever.

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[1] Reports and Papers on Cholera in England in 1893, with an Introduction by the Medical Officer of the Local Government Board. Presented to both Houses of Parliament by Command of Her Majesty, London, 1894.

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A TRAINING-SCHOOL FOR NURSE ATTENDANTS.

We publish in another column the announcement that a training-school for nurse attendants is being established at the City of Boston Almshouse and Hospital on Long Island for the purpose of training attendants for cases of chronic illness; attendants whose services can be obtained for a moderate price.

When one considers the number of cases of chronic illness in the community, among people of means insufficient to command the expensive services of a trained nurse, cases which do not need perhaps skilled nursing, but merely constant care and attendance requiring only a moderate amount of training, the need of a supply of such attendants becomes manifest. These chronic cases do not need the highest grade of skilled nursing, and often could not afford to pay for it if they did, and yet cannot be entrusted to entirely untrained attendants with either safety or comfort to themselves or their families.

The training-school which is to be established ought to fulfil a distinct and important mission in furnishing attendants for chronic illness in patients of moderate means.

◆

MEDICAL NOTES.

Proportion of Medical Students.— It is stated that the proportion of medical students to the general population in Italy is 61 to 100,000; in Germany, 63 to 100,000; and in France, 57 to 100,000.

The Library of the Surgeon-General's Office.— According to the *New York Tribune*, the library now includes about 112,000 bound volumes and about 150,000 pamphlets.

Proposed Memorial to Professor Huxley.— It has been decided to establish in connection with the Charing-Cross Hospital Medical School a permanent memorial to one of its most distinguished students, the late Professor Huxley, and a committee has been formed for this purpose. The memorial will probably take the form of an annual lecture and a science scholarship and medal.

Etiology of Actinomycosis.— Poncet, of Lyons, has recently reported at the French Academy of Medicine a case of actinomycosis which was probably acquired in a peculiar manner. During the walks in the country the patient was in the habit of chewing the stems of grass and straw, and it is thought that he contracted the disease in this manner. Another interesting point about the case was the manner in which it yielded to treatment by large doses of potassic iodide, in which respect it acted exactly like a tertiary syphilitic lesion.

Hospitals for Tuberculosis.— At the recent meeting of the American Climatological Association the following preamble and resolution were unanimously adopted:

> *Whereas*, Since tuberculosis has been demonstrated to be a communicable disease, it has become doubly desirable that hospitals for the reception of the poor afflicted with the disease should be established,
>
> *Resolved*, That the American Climatological Association recommend the establishment of such hospitals in every State, not only for the relief of the great suffering attending this disease among the poor, but also as a protection of the community against its spread.

Yellow Fever finds Many Victims in Cuba. — The reports recently received by the Marine-Hospital Service from Cuba show an alarming increase in the number of deaths from yellow fever. From June 30th to July 6th there were twenty-five deaths reported from Santiago de Cuba; and for the week from July 4th to July 11th twenty cases and eight deaths at Havana. For the week from June 28th to July 4th, there were nine deaths reported from Vera Cruz, Mexico.

Self-Poisoning by Chloroform.— Two deaths have recently been reported in England from the inhalation of chloroform for the relief of pain, the victims in both cases having administered the remedy to themselves. One was that of a layman who inhaled chloroform to relieve the pain from a poisoned wound of the finger, and the other of a medical man who took the same means of relieving an attack of sciatic neuralgia.

Logic in a Coroner's Jury.— At a recent inquest in London it was suggested that the deceased had lost her life in consequence of having taken eight pills at a dose. This hypothesis was, however, at once disposed of by the statement of a juror that he knew a man who was in the habit of taking twenty at a time, and the further testimony of another juror that he himself usually took ten for a dose.— *Medical Press and Circular.*

Nephropexy by Tendon.— At the May meeting of the Société Nationale de Médecin de Lyon, M. Poullet presented the case of a woman upon whom he had successfully performed the operation of nephropexy by means of a tendon of the longissimus dorsi muscle, the upper end of which was detached from its muscular belly, and passed so as to make a loop, through the posterior part of the capsule of the kidney, supporting the organ and holding it in place. This ingenious method is probably the first one devised for fixation of an abdominal organ by what may be called a living suture, as one end of the tendon is not freed from its attachment. The operation was first successfully performed upon a dog, and later on the human subject.

Medical English in India.— An English paper publishes the following letter addressed by an Indian native soldier to his commanding officer: "*Honored sir,* — Having been amputated from my family for some years, and as I have complaints of the abdomen, coupled with great conflagrations of the internals, and prostration of all desire for work, with also the disgorging of my dinner, I hope your Highness will excuse my attending at orderly room for nine or ten days more, and in duty bound shall ever pray for the salubrity of your temper and the enlargement of your family."

BOSTON AND NEW ENGLAND.

A Training-School for Nurse Attendants.— There is being established at the almshouse and hospital of the City of Boston on Long Island a training-school for "nurse attendants." The object of the authorities in charge of the hospital is to furnish to physicians and the public a class of skilled attendants, trained especially to nurse the chronically sick and infirm, for which training this hospital has exceptional facilities. After graduation attendants will command from seven to ten dollars a week. Particulars as to course of study, length of term, etc., can be obtained from the superintendent, C. H. Coggswell, M.D.

Cause of Marlboro's Typhoid Fever Epidemic.— It is stated that the Marlboro', Mass., Board of Health will issue maps with its annual report, showing that the great majority of the cases of typhoid fever, occurring in that town some months ago, were located along the route of a skimmed-milk delivery concern. This is in support of the theory of Professor Sedgwick of the Institute of Technology, that the epidemic was caused by the use of the skimmed milk.

NEW YORK.

Quarantine against Cuban Vessels.— With a view to the exclusion of yellow fever, Health Officer Doty has put in force a rule requiring that all vessels arriving from Cuba be held in quarantine until five days from the time of leaving port has elapsed, although passengers with certificates of acclimatization may land at once.

Management of the Insane of New York City.— The State Commission in Lunacy has sent to Mayor Strong a letter severely criticising the management of the insane of the City of New York and urging the prompt improvement of the buildings of the present asylums and the erection of increased accommodations. An important suggestion is made to the effect that funds to provide for the relief of the over-crowding of the insane may be obtained immediately through the interposition of the Board of Health, as recently in the case of the Street-Cleaning Department, where, in consequence of the Board's certifying that certain work was required by considerations of public health, the requisite amount of money was at once secured.

An Operation for Appendicitis in a Child of Three Years.— Dr. Fredreich Kammerer, of New York, assisted by Dr. J. O. F. Hill, of West Brighton, recently operated for appendicitis on a child three years old at the Hotel Brighton, Coney Island. For thirty-six hours the patient appeared to be rapidly recovering, but finally succumbed to peritonitis. It is believed that this is one of the youngest children upon whom the operation has ever been performed.

Death of Dr. Geo. H. Smith.— Dr. George H. Smith, of New York, died at the home of his nephew, Dr. F. W. Smith, at Syracuse, July 15th, of Bright's disease, aged sixty-seven years. Dr. Smith was graduated from the Medical Department of the University of the City of New York in 1857, and served with distinction as an army surgeon during the late war. He was Professor of Surgery in the Long Island Medical College for a number of years, and was a prominent member of the Medical Society of the State of New York.

Mortality from Diarrheal Diseases. — Although the weather during the first half of July was unusually cool for the season, there was a considerable increase in the city's mortality, due to the prevalence of diarrheal diseases in infants and young children. During the week ending July 13th, 1,058 deaths were reported. In the week ending July 20th, notwithstanding the somewhat warmer weather, the mortality was somewhat smaller, the number of deaths being 1,012. Of these, 265 were caused by diarrheal diseases. There were 89 deaths from phthisis and 55 from pneumonia. Among the zymotic diseases, 27 deaths were caused by diphtheria, 17 by measles and 8 by scarlet fever.

Miscellany.

POPULAR THERAPEUTICS AT THE BEGINNING OF THE EIGHTEENTH CENTURY.

In the year 1831, writes Dr. Dugald Mitchell in the *Glasgow Medical Journal*, there was published in Edinburgh the third edition of a popular medical work entitled "The Poor Man's Physician, or the Receits of the Famous John Moncrief of Tippermalloch." Sir John, who died in 1810, seems to have had at his disposal an abundance of remedies for the "cure" of most diseases, especially of those diseases which are obscure and obstinate of treatment. Animal excretions, such as bile, urine, ordure of various animals, putrefied serpents, menstrual fluid, dried placenta, brains of animals, blood of goats, bats, bulls, etc., are among the remedies recommended.

Dr. Mitchell writes that these recommendations were but a lingering legacy from the ancient physicians, and that Brown-Séquard's suggestion for the invigoration of the aged would not have struck Pliny as at all out of the way. The modern use of animal extracts, thyroid, pancreatic, nerve, brain, etc., seems rather a recrudescence of the materia medica of old, though served up in a more enticing form.

"At the beginning of the last century, and for one purpose or other, human milk, cows' milk, mares' milk, sheep's milk, goats' milk, dogs' milk, sows' milk — all were used, and under the most diverse circumstances. The value of milk in phthisis was thus quaintly extolled: 'Milk doth hit all intentions for cure. It cleanseth with its serous part; it conglutinateth with its coagulating part; and nourisheth and refresheth with its unctuous part.'

"Milk from a *black* or *red* cow was specially recommended in diarrhea, and it was somewhat elaborately fitted for its purpose by being boiled nine times, a little spring-water being added after each boiling.

"Precious stones were sovereign remedies in innumerable diseases. A jasper, hung about the neck or applied to the liver, was resorted to in spitting of blood. An emerald, held in the mouth, was employed in dysentery, and a 'green jasper,' we are told, 'or a piece of ivory borne about the pit of the stomache stayeth vomiting.' A sapphire, held before a boil, was credited with arresting it, and a sapphire, or jacynth, or jasper, or diamond worn or carried, was considered effectual in restoring a lost appetite. To combat the plague even a larger variety might be resorted to — a carbuncle, ruby, agate, garnet, jacynth, or sapphire."

The application of heat was practised for the relief of conditions for which it is now employed, but the treatment must have been often difficult to carry out. In convulsions it is recommended to "put the part affected into an ox or sheep's belly, or other great creature's belly newly killed, and let it remain there until warm." Surely a difficult procedure to apply in a case of general convulsions! For headache it was recommended to apply sheep's lungs hot. For colic a live duck's belly is to be applied.

Among the remedies for hemorrhage we find the forerunner of tannic and gallic acids in the use of the distilled water of oak-tree leaves in hemoptysis, and of water in which the inner rind of an oak sapling had been macerated, in hemorrhage from the bowels. The writer finds a suggestion of the use of the ligature in the recommendation to "rub and bind the extreme parts" in the treatment of certain hemorrhages.

A method for coagulating the blood in epistaxis was the introduction into the nostrils of the hairs of a hare mixed with white of egg or vinegar. In menorrhagia, astringent injections, such as the juice of strawberries and their leaves, or plantain, was employed, this application being reinforced by pessaries of the leaves of purslain, plantain or knot grass rolled in a piece of fine linen and put up into the womb.

"In the same condition, and in order to produce derivative or revulsive effects, it was advised to 'fasten a very large cupping glass to the patient's dugs, but take it quickly off again.' Uterine prolapse was treated by reduction, followed by injections of the decoction of galls, or, in bad cases, by the use of pessaries 'made of cork, smeared over with wax, or made of wax alone, round or long.' A method of reduction spoken of was, to say the least of it, decidedly primitive. It was to 'affright the patient with a red hot iron in your hands, threatening to burn the part.'

"The last remedy in iliac passion, if it arose from circumvolution of the intestines which is either from wind or a hernia, is to apply a smith's bellows to the anus, and blow in the belly."

Among the recommendations for eye diseases it may be noted that "a drop of the patient's urine powerfully drieth up tears."

Alopecia was treated by rubbing the head over with onions, or using the burnt ashes of goats' hoofs rubbed up with pitch.

In ulceration of the nostrils, snuffing up smoke from wax candles was said to "powerfully dry up the ulcers," certainly, as Dr. Mitchell remarks, a primitive carbonaceous application.

Whatever may be said of these primitive methods of treatment, they certainly show that if, as we are told, the physician who recommended them had a large practice, the patients of that day were very submissive in carrying out of heroic measures. A modern physician who recommended rubbing the scalp with onions, or worse, with pitch, would run a very fair chance of losing his patient, especially if the baldness were not quite complete, so that there was a little hair left for the pitch to stick to!

Correspondence.

THE CASTRATION OF CRIMINALS.

HAMILTON, O., July 20, 1895.

MR. EDITOR: — I have been much interested in Dr. Arthur K. Stone's paper on "Prostitution," which appeared in your issue of July 11th. There is one proposition, namely, the castration of criminals, to which I cannot subscribe.

On several occasions I have combated in print the growing belief that ovariotomy and castration were proper methods of dealing with the habitual criminal and sexual pervert. Of course, those thus treated could never beget children, but if a judge demanded such a barbarous mutilation, and if a jailor or physician inflicted it, would not the morality of the community undergo a great shock? Would not those accustomed to perform such atrocities — or even those accustomed to hear of them — would not their moral faculties be blunted?

One of the worst sequels of war is that moral anesthesia which affects society for so long a time afterwards. So pronounced is this symptom that it may be observed among all so-called Christian nations. Indeed, to find the highest development of Christian virtues we must turn to those tribes or communities where war is unknown.

It would seem that brutal and severe punishments would produce the same results on our moral sense as wars; and Pike in his "History of Crimes in England" has well shown the degrading effects of torture and mutilation on all who witness them.

Just as mercy is twice blessed, so is cruelty twice cursed; it injures both the victim and all who know of his suffering. The reports of penal institutions and asylums prove that severe punishment makes the culprit vicious, that it degrades him, that is merely appeals to his sense of fear, and that it has the least reformatory tendency.

From Socrates to Henry George there has been waged a long, weary battle for individual rights. There is in the latest philosophy this tenet, that all men have equal rights to develop themselves as they see fit, provided they regard the like rights of others. What right have we then to deprive the rapist or harlot of opportunities to develop their normal faculties? It might be answered that we could have a legal right; but let us not put faith in the fiats of legislatures, especially since Carrol D. Wright tells us that it is estimated that one-sixth of the laws on the books to-day are "opposed to well-established social and economic principles."

While the castrationists recognize the part bad parentage and bad environment play in producing criminals, they fail to see that the proposed remedy would surely conduce to bad morals. They have made some strange interpretations of historical facts, which may account for their stranger logic.

So much for criticism; now for treatment. I concur fully with Dr. Stone in his suggestions to arouse public opinion, to check the girl traffic, to educate the youth, and to raise the age of consent. All these propositions I believe in, because in no way would they interfere with the rights of the individual. If it is the proper function of the State to protect its members from the aggressions of others (and I believe it is), then it is right for us to protect girls from those who would injure them. To create public opinion and to volunteer information to boys and girls interferes with no one's rights, but to make eunuchs and sterile women certainly does. Furthermore, I believe that it is only by persuasion that we can make men better. Let there be no coercion unless one is derelict in one's duty to his fellows. And if force or punishment are deemed necessary, how much more humane to confine the criminal until he gives promise of reform, than to destroy that powerful, useful faculty, the sexual instinct.

Boston is one of those cities, I believe, in which there are special patrolman whose duty is to keep people (especially novices in crime) out of prison. The number who take their first step in a criminal career after a sojourn in a station-house or jail is surprisingly great. It is a sad commentary on our courts of justice when they become so dangerous that people need police protection from them. If, as before mentioned, it is the duty of the State to protect its units from the aggressions of others, then we ought to have the benefits of free justice. We should have courts in which disputes could be settled free of charge.

Let us have more societies whose object is to help men to help themselves, such, for example, as The Associated Charities.

Were Dr. Stone to find a man out of employment to-day in Boston, I venture to say that he could not find him a job without the consent of some other man. About the only thing for an unemployed person to do is to go to the water's edge and fish. Notwithstanding the abundance of unused land, he has no access to it except by the consent of those who monopolize it for speculative purposes. What wonder is it then that men cut off from land, condemned to poverty and a certain sort of slavery, should become vicious and degraded! Until philanthropists see clearly that it is impossible to develop one's self without access to nature, they will probably continue as they have in the past, trying to improve men by prohibition, tariffs, capital punishment and mutilations. Yours very sincerely,

MARK MILLIKEN, M.D.

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IS THE HANDLING OF ARTIFICIAL FERTILIZERS INJURIOUS TO HEALTH?

96 EAST AVENUE, ROCHESTER, N. Y.,
July 16, 1895.

MR. EDITOR: — In a suburb of this city there is a storehouse belonging to the "Bradley Fertilizer Company," with headquarters, I believe, in Boston. It is a general agency, and as such, a much larger quantity of the fertilizer is handled here than in other communities outside of Boston.

Its advantageous situation enables the company to ship their product in bulk by canal, store it in large bins, and reship by rail in sacks, as is their custom, to the cities and towns included in this agency as a distributing point.

The building is located near the centre of the village (Brighton), and contiguous to a very fashionable thoroughfare leading out of the City of Rochester.

Complaints have been made, largely on account of the so-called injurious effect upon the health of the community.

The local board of health is desirous of information, whether physicians in other communities have found in their experience, that the odor or dust from fertilizers *is* or *is not* a direct or contributing cause of sickness?

Anything from your readers bearing upon this subject will be most gratifying, and will be thankfully received.

Very respectfully,
HENRY H. COVELL, M.D.

METEOROLOGICAL RECORD,

For the week ending July 13th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r. * 8.00 A. M.	We'th'r. * 8.00 P. M.	Rainfall in inches.
S.. 7	29.82	74	83	65	86	91	88	W.	S.W.	6	5	O.	O.	
M.. 8	29.82	76	85	68	76	87	81	S.W.	S.W.	12	8	H.	F.	
T.. 9	29.77	74	78	70	89	88	88	S.	N.W.	9	4	O.	O.	.91
W..10	30.02	68	75	60	59	58	58	N.W.	N.W.	17	11	C.	C.	
T..11	30.16	62	68	56	56	65	60	N.	S.W.	6	6	F.	F.	
F..12	30.13	68	78	57	58	71	64	W.	S.W.	5	15	C.	C.	
S...13	29.99	64	72	57	78	83	80	S.W.	S.W.	10	14	C.	O.	.28
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 13, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Measles.
New York . .	1,956,000	1053	656	50.50	8.60	32.00	2.70	2.90
Chicago . . .	1,600,000	—	—	—	—	—	—	—
Philadelphia .	1,139,457	583	317	32.47	7.82	26.86	3.74	.34
Brooklyn . .	1,013,000	592	370	19.21	6.08	15.20	3.36	.48
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	177	72	21.66	14.82	8.55	6.84	1.14
Baltimore . .	500,000	—	—	—	—	—	—	—
Washington .	285,000	146	78	33.12	8.28	29.67	—	—
Cincinnati . .	325,000	—	—	—	—	—	—	—
Cleveland . .	325,000	104	57	22.08	8.64	19.20	—	—
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	54	19	25.90	14.80	16.66	—	—
Charleston . .	65,165	49	18	16.24	8.16	10.20	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	18	6	27.77	16.66	16.66	—	—
Fall River . .	92,233	51	32	50.96	3.92	47.04	—	—
Lowell . . .	90,613	—	—	—	—	—	—	—
Cambridge . .	79,607	—	—	—	—	—	—	—
Lynn	65,123	15	3	13.33	6.66	—	6.66	—
Springfield . .	50,284	19	12	52.60	5.26	36.82	—	10.52
Lawrence . .	49,900	29	—	62.50	3.45	59.05	—	—
New Bedford .	47,741	11	7	36.36	18.18	27.27	—	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	7	2	28.56	14.28	14.28	—	—
Salem	33,155	8	5	25.00	12.50	12.50	—	12.50
Haverhill . .	32,925	4	0	50.00	50.00	25.00	—	—
Malden . . .	30,209	6	1	50.00	33.33	16.66	—	—
Chelsea . . .	29,806	12	2	16.66	8.33	—	8.33	—
Fitchburg . .	29,383	3	1	33.33	—	33.33	—	—
Newton . . .	28,837	6	1	—	33.33	—	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,954	14	3	—	28.56	—	—	—
Waltham . .	22,058	—	—	—	—	—	—	—
Quincy . . .	19,642	5	4	—	20.00	—	—	—
Pittsfield . .	18,802	3	0	33.33	66.66	—	—	—
Everett . . .	16,585	3	0	—	—	—	—	—
Northampton .	16,331	—	—	—	—	—	—	—
Newburyport .	14,073	—	—	—	—	—	—	—
Amesbury . .	10,920	1	0	—	—	—	—	—

Deaths reported 2,984; under five years of age 1,707; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 958, consumption 265, acute lung diseases 140, diarrheal diseases 742, diphtheria and croup 87, measles 39, whooping-cough 30, typhoid fever 19, scarlet fever 18, cerebro-spinal meningitis 12, puerperal fever 5, erysipelas 4, malarial fever 2.

From whooping-cough New York 17, Brooklyn 4, Philadelphia 3, Boston 2, Providence, New Bedford, Brockton and Haverhill 1 each. From typhoid fever Philadelphia 5, New York, Brooklyn, Boston and Charleston 3 each, Washington, Cleveland and Pittsfield 1 each. From scarlet fever New York 4, Boston 3, Brooklyn, Nashville, Fall River and Malden 2 each, Philadelphia, Washington and Chelsea 1 each. From cerebro spinal meningitis New York 5, Washington 3, Cleveland, Lynn, Lawrence, Chelsea and Amesbury 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending July 6th, the death-rate was 17.5. Deaths reported 3,564; acute diseases of the respiratory organs (London) 160, diarrhea 337, measles 131, diphtheria 71, whooping-cough 62, scarlet fever 31, fever 25, small-pox (Oldham, 4, London 3, Liverpool 1) 8.

The death-rates ranged from 24.4 in Liverpool to 9.1 in Croydon; Birmingham 16.2, Bradford 17.9, Gateshead 13.6, Hull 18.3, Leeds 19.6, Leicester 15.9, London 18.0, Manchester 18.7, Newcastle-on-Tyne 20.1, Nottingham 10.6, Plymouth 14.6, Portsmouth 12.2, Sheffield 17.0, Sunderland 17.0, Wolverhampton 19.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 13, 1895, TO JULY 19, 1895.

Leave of absence for two months, to take effect on or about July 13, 1895, is granted COLONEL CHARLES T. ALEXANDER, assistant surgeon-general.

CAPTAIN WILLIAM H. CORBUSIER, assistant surgeon, will, in addition to his present duties, take charge of the Medical Supply Depot in New York City, during the absence on leave of COLONEL ALEXANDER.

CAPTAIN ADRIAN S. POLHEMUS, assistant surgeon, granted leave of absence for two months, to take effect after his return to his proper station, Fort Douglas, Utah, or at such time thereafter as his services can be spared by his post commander.

CAPTAIN JULIAN M. CABELL, assistant surgeon, granted leave of absence for four months, on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING JULY 15, 1895.

BAILHACHE, P. H., surgeon. To assume command of Camp Low Quarantine. July 5, 1895.

HUTTON, W. H. H., surgeon. To report at Bureau for temporary duty. July 12, 1895.

WHEELER, W. A., surgeon. Relieved from command of Camp Low Quarantine. July 5, 1895.

BANKS, C. E., passed assistant surgeon. To proceed to Detroit, Mich., on special temporary duty. July 5, 1895.

GOODWIN, H. T., passed assistant surgeon. Granted leave of absence for thirty days. July 12, 1895.

VAUGHAN, G. T., passed assistant surgeon. Granted leave of absence for seven days. July 6, 1895.

STONER, J. B., passed assistant surgeon. To proceed to Detroit, Mich., for temporary duty. July 12, 1895.

EAGER, J. M., passed assistant surgeon. To proceed to Southport, N. C., and assume command of quarantine station. July 6, 1895.

STEWART, W. J. S., assistant surgeon. Granted leave of absence for nine days. July 5, 1895.

WICKES, H. W., assistant surgeon. Granted leave of absence for twenty-three days. July 5, 1895.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Massachusetts Medico-Legal Society, Vol. II, No. 5, 1895.

Myxedema and the Thyroid Gland. By John D. Gimlette, M.R.C.S. (Eng.); L.R.C.P. (Lond.). London: J. & A. Churchill. 1895.

Report of the Commissioner of Education for the year 1891–92. Vols. I and II. Washington: Printed by the Government. 1894.

The Johns Hopkins Hospital Reports. Vol. IV, Nos. 7–8. Report in Gynecology, III. Baltimore: The Johns Hopkins Press. 1895.

Ninth Annual Report of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. Printed by the State. 1894.

Wills Eye Hospital Reports, Vol. I, No. 1. Editorial Committee, Charles A. Oliver, M.D., Conrad Bemis, M.D. Philadelphia, 1895.

The Year-Book of Treatment for 1895; a Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co. 1895.

Annual Report of the Department of Health, City of Chicago, for the year ending December 31, 1894. Arthur R. Reynolds, M.D., Commissioner of Health.

Proceedings of the American Medico-Psychological Association at the Fiftieth Annual Meeting held in Philadelphia, May 15–18, 1894. Utica: Published by the Association. 1895.

Transactions of the New York State Medical Association for the year 1894. Vol. XI. Edited for the Association by E. D. Ferguson, M.D., of Rensselaer County. New York City: Published by the Association. 1895.

Trattato di Patologia e Terapia Chirurgica Generale e Speciale. Opera illustrata da circa 500 figure originali intercalate nel testo e da tavole litografidir. Vol. I. Printata 2a (pag. 209 a 400). Live 5. Roma: Societa Editeur Dante Alighieri. 1895.

Atlas of Clinical Medicine. By Byrom Bramwell, M.D., F.R.C.P., Edin., F.R.S., Edin., Assistant Physician to the Edinburgh Royal Infirmary, etc. Vol. III, Part 2. Edinburgh: Printed by J. & A. Constable at the University Press. 1895.

Index of Medicine; a Manual for the Use of Senior Students and others. By Seymour Taylor, M.D., Member of the Royal College of Physicians; Senior Assistant Physician to the West London Hospital. Philadelphia: Lea Brothers & Co. 1894.

A Treatise on the Nervous Diseases of Children, for Physicians and Students. By B. Sachs, M.D., Professor of Mental and Nervous Diseases in the New York Polyclinic; Consulting Neurologist to the Mt. Sinai Hospital, etc. New York: William Wood & Co. 1895.

Affections Chirurgicales des Membres, Statistique et Observations. Par le docteur Polaillon, Chirurgien de Hôtel-Dieu, Professeur agrégé à la Faculté de Médecine de Paris, Membre de l'Académie de Médecine. Un volume in 8° de 810 pages. Paris: Librairie O. Doris. 1895.

The Treatment of Wounds, Ulcers and Abscesses. By W. Watson Cheyne, M.B., Ed., F.R.S., F.R.C.S., Professor of Surgery in King's College; Surgeon to King's College Hospital and Paddington Green Children's Hospital, London. Philadelphia: Lea Brothers & Co. 1895.

A Manual of the Modern Theory and Technique of Surgical Asepsis. By Carl Beck, M.D., Visiting Surgeon to St. Mark's Hospital and to the German Poliklinik of New York City, etc. With 65 illustrations in the text and 12 full-page plates. Philadelphia: W. B. Saunders. 1895.

Suprapubic Cystotomy for Calculus of the Bladder; Trendelenburg's Transverse Incision; Transverse Division of the Recti and Pyramidalis Muscles; Incision of the Bladder without Inflation of the Rectum or Injection of the Bladder. By A. H. Meisenbach, M.D. Reprint. 1895.

Fonctionnement de la Maison d'Accouchements Baudelocque, Clinique de la Faculté Disigér, par le Professeur Adolphe Pinard. Année 1894. Dr. G. LePage, Ancien Chef du Laboratoire de la Clinique, Ancien Chef de Clinique, Accoucher des Hôpitaux. Paris: G. Steinheil, editeur. 1895.

A Text-Book of Physiology. By M. Foster, M.A., M.D., LL.D., F.R.S., Professor of Physiology in the University of Cambridge and Fellow of Trinity College, Cambridge. Revised and abridged from the author's Text-Book of Physiology in five volumes. New York & London: Macmillan & Co. 1895.

Burdett's Hospital and Charities Annual, 1895. By Henry C. Burdett, author of "Hospitals and Asylums of the World"; "Hospitals and the State"; "Pay Hospitals of the World"; "Cottage Hospitals," etc. London: The Scientific Press. New York: C. Scribner & Sons. Boston & Chicago: D. C. Heath & Co.

Multiple Deviations of Both Legs in a Rhachitic Child; Osteotomy of Five Bones Performed in one Séance; Recovery. The Treatment of Gonorrheal Infections in the Female by Permanganate of Potassium. Benign Tumors of the Breast. By Charles Green Cumston, B.M.S., M.D., Boston, Mass. Reprints. 1894–95.

Skiascopy and its Practical Applications to the Study of Refraction. By Edward Jackson, A.M., M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine; Surgeon to Wills Eye Hospital, etc. With twenty-six illustrations. Philadelphia; The Edwards & Docker Co. 1895.

Demon Possession and Allied Themes, being an Inductive Study of the Phenomena of our own Times. By Rev. John L. Nevrus, D.D., for forty years a Missionary to the Chinese, with an introduction by Rev. F. F. Ellmwood, D.D., Secretary of the Board of Foreign Missions of the Presbyterian Church. With an index. Chicago: Revell & Co. 1895.

System of Surgery. Edited by Frederic S. Dennis, M.D., Professor of Principles and Practice of Surgery, Bellevue Hospital Medical College; Visiting Surgeon to the Bellevue and St. Vincent's Hospitals, etc.; President of the American Surgical Association, etc.; assisted by John S. Billings, M.D., LL.D., Edin. and Harv.; D.C.L., Oxon.; Deputy Surgeon-General, U. S. A. Vol. II. Minor Plastic and Military Surgery; Diseases of the Bones, Orthopedic Surgery; Aneurysm; Surgery of the Arteries, Veins and Lymphatics; Diseases and Injuries of the Head; Surgery of the Spine; Surgery of the Nerves. Profusely illustrated. Philadelphia: Lea Brothers & Co. 1895.

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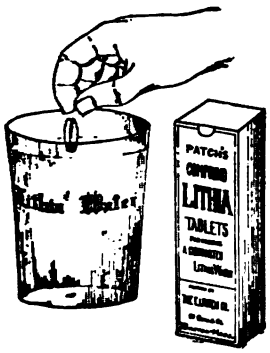

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Columbian University........................
Crittenton, C. N...Liquid Beef Tonic, etc. 11, 13,
Cutter, Dr. W. P........................
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PAGE

LECTURE.

The New England Invalid. Shattuck Lecture for 1895. *By Robert T. Edes, M.D.*, Jamaica Plain, Mass. (Concluded.)............ 101

ORIGINAL ARTICLES.

Notes on the Repair of Rupture of the Perineum through the Sphincter Ani. *By W. L. Burrage, M.D.*, Boston............ 108

CLINICAL DEPARTMENT.

Two Illustrative Cases of Posterior Position of the Occiput. *By Charles W. Townsend, M.D*............ 112

A Case of Apparent Hermaphroditism. *By Francis Minot, M.D*............ 112

MEDICAL PROGRESS.

Recent Progress in Obstetrics. *By Edward Reynolds, M.D*............ 112

Celiotomy for Ectopic Gestation. — A Method of Treating Placenta Previa.— Symphyseotomy.— Signs of Maturity at Birth.— Labor Complicated by Heart Disease.— Disinfecting the Hands. — Rupture of the Uterus.— Perforation of the Uterus.

PAGE

REPORTS OF SOCIETIES.

The Obstetrical Society of Boston. *Charles W. Townsend, M.D.*, Secretary............ 115

Notes on the Repair of Rupture of the Perineum through the Sphincter Ani. – Two Illustrative Cases of Posterior Positions of the Occiput.— A Case of Apparent Hermaphroditism.— Cancer of the Uterus.

American Surgical Association. New York, May 28, 29 and 30, 1895. (Concluded.)............ 116

Ligature of the Innominate Artery, with the Report of a Case.— Two Cases of Displacement of the Ulnar Nerve at the Elbow, Successfully Treated by Operation.— Immediate Suture of the Gall-Ducts and Gall-Bladder after Extraction of Stones, with Cases.—Congenital Esophageal Pouch; Excision; Immediate Suture of Esophagus; Recovery.—On the Consequences of Hyperemia and the Pathology of Inflammation and Suppuration. – Hernia of the Bladder as Met with during Operations for Inguinal and Crural Hernia.— A Case of Cholecystectomy.— Injuries to Pneumogastric and Phrenic Nerves.

EDITORIALS.

Recent Accidents from Antitoxin............ 119

Cerebro-Spinal Meningitis in an Infant... 120

Medical Notes............ 120

Diphtheria in Paris.— The Italian Congress of Internal Medicine.—Craniectomy Superseded. — A Natural Feet Society. — Mr. Heath Reelected.— Russian Subscription in Honor of Lavoisier.— The Effect of Ovariotomy upon the Voice.—The Czarewich has Consumption. — A Conference on Bovine Tuberculosis.— A New Method of Attracting Patronage.

New England.

Acute Infectious Diseases in Boston.

New York.

Dr. Lewis appointed President of the Board of Health. — Dr. Tracy succeeds Dr. Nagle. — Fracture of the Cervical Vertebræ.— Death of a Centenarian. — Danger of answering Telephone Calls.— Suicide of Dr. Hagan.

MISCELLANY.

The Bicycle and Medical Practice............ 121

The Etiology of Goitre............ 122

A Report on One Hundred and Three Operations on the Stomach............ 122

The Effect of Vivisection upon the Greatest of Vivisectors............ 122

Palliative Trephining in Cerebral Tumor. 123

Therapeutic Notes............ 123

Meteorological Record, July 20, 1895............ 124

Record of Mortality, July 20, 1895............ 124

Army Service............ 124

Appointments............ 124

Books and Pamphlets Received............ 124

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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See pages 16, 17, 18 and 19.

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Lecture.

THE NEW ENGLAND INVALID.[1]

SHATTUCK LECTURE FOR 1895.

BY ROBERT T. EDES, M.D., JAMAICA PLAIN, MASS.

(Concluded from No. 4, page 81.)

As I have already suggested, it is doubtful if the lower races, and even certain classes in civilized society, have the structure which fits them for the undesirable privilege of "nervous prostration." It has sometimes seemed as if that objectionable, but indispensable, phrase were used with a slight savor of pride, as if like gout, a liability thereto testified to a sort of mental superiority, or even a more advanced social standing.

Probably more than one generation may be required for its full development.

Heredity cannot easily be traced statistically, for the reason of the indefiniteness of the terms in which we describe and distinguish the nervous susceptibility, and also the controlling influence of personal feeling and theory in the testimony of relatives; but no one can deny its great importance, even if it is impossible to put it in figures. The difference in susceptibility, congenital or acquired in the early years of life, is the only way in which we can reach anything like an explanation of the great differences in the magnitude and effectiveness of the exciting cause of nervous break-down. It seems necessary to assume a much greater variation than exists in regard to most bodily qualifications. No man is twice as tall and very few half as tall as the average, but it seems as if we should be obliged to express nervous endurance in terms of tens and hundreds, if we could measure it in figures at all, in order to cover the possibilities of the strain under which it is likely to give way.

Whether this difference depends upon complication and delicacy of nervous arrangement, or whether it is simply a matter of the mass of protoplasm or of nuclein, or whether, which is much the more probable, it resides in a recuperative power which is not expressible anatomically, is a question impossible to answer. Practically, nervous resistance is undoubtedly somewhat increased by the best general nutrition and very distinctly impaired by the reverse, but the extent to which it can be built up in advance by general nutrition is probably not very great.

Deficient and impaired nutrition of long duration may render permanent a stunted or misdirected nervous growth that might under more favorable circumstances have become normal.

Intellectual occupations, that is, those involving a cerebral activity above the average, will undoubtedly contribute the larger number of nervous invalids (always, however, leaving out the hysterical), but it is not of so much consequence what the kind of labor is or how high a grade of intellect is involved, provided there is no undue susceptibility and also that the conditions under which it is done are not unfavorable. This implies, of course, that the labor should be fitted to the capacity of the individual.

The institutions for the higher education of men or women show no undue proportion of nervous break-down, and it is just as easy to find typical examples among teachers and scholars in the public schools of lower grade, where the purely mental strain is probably no greater, or at any rate the intellectual results are no more valuable, but yet the conditions are of a distinctly worse kind, in the multiplicity of the exactions, the utter want of adaptation to individual capacity, and probably, worst of all, the unhealthy stimulus under which it is done. A patient whom I knew fifteen or more years ago, before she came to the Adams Asylum, used to date her final break-down to a school essay on the Geneva conference, none of the original participators in which, whose opinions were presumably quite as carefully and laboriously formed, seem to have shared the same fate.

It is probably unnecessary for me to remind you of what public-school teachers are supposed to know, but the following list was obtained from a girl of twenty-four who was teaching up to a day or two before her entrance: — Geography, arithmetic, reading, writing, drawing, music, composition, a little grammar, orthography, gymnastics, zoölogy, botany, a little geology and mineralogy, physiology, which very interestingly was made to include hygiene (mental?) and the use of intoxicating liquors. Latin, French and German I understood to have been just introduced into the course, perhaps by the way of diversion after hours. Whether she went to a party or two during the week I did not learn, or a Bible-class Sundays, but I find in my notes "four supervisors' meetings per week," which it is easy to imagine were not occasions of unalloyed happiness.

The influence which converts healthy fatigue into a pathological condition, too often permanent, is the stress and worry under which work is done, and in this way occupations which involve no harmful amount of intellectual labor come to have disastrous results. This is why teachers and students furnish so large a proportion of our patients, and why those that have "no occupation" surpass them. "No occupation" is likely to mean a dozen different ones, for none of which has the person any special aptitude. It is not the work done, but the driving.

They study, not to know something, but to pass an examination on it; not because they are interested in it but because some one else has studied it and it is a good thing to do, and they do not wish to be left behind; not because the girl cares anything about Greek, but because Greek has been taken as a sort of standard for so-called scholarship in boys, and she wishes to glorify her sex and show the world that girls can do anything that boys can.

Such cases, however, are the less serious as being more frequently and more easily avoidable. In by far the greater number which we see, the element which changes physiology to pathology is not so easily got rid of. Household and business cares never relaxing, anxious work with no holidays, often two kinds of work, the worry of the school-room exchanged only for the worry of an invalid's sick room, or for the preparation for new examinations to retain the old places or to secure the necessary promotion.

Bodily fatigue, if taken not in the form of exhilarating out-door exercise but involved in the daily occupation itself, like continuous standing or working a machine, is a potent adjuvant.

All sorts of combinations can be imagined, but the one essential condition is worry and drive. To the fortunate individuals who do not allow things to worry them; who let their creditors walk the floor, instead of doing it themselves, when the note is coming due; whose business is done when they shut up their books for the night; who shed all their own and their neighbors' troubles as the duck sheds water, brain work is as healthy as any; but those people are rare. The New-England woman who is undertaking, with perhaps insufficient equipment, a career just a little beyond her real mental strength, which she must follow for her daily bread, or driven there by a social ambition, which is no unimportant factor in such cases, or even by the proverbial "conscience," is in a dangerous position. If you will pardon the phrase, which I have no doubt is already in your minds, when she has "bit off more than she can chaw," her danger of nervous dyspepsia, both in the literal and figurative sense, is very great.

---

[1] Delivered before the Massachusetts Medical Society, June 11, 1895.

Such cases are not difficult to understand or to deal with in their earlier stages, but they may, by their persistence and neglect at that time, by obstinate fighting against the weariness which is nature's call for a halt, get into a less manageable form.

We do not know of an anatomical condition of the nervous centres akin to distorted bones and ligaments, but the comparison is not a forced one when we find mental and moral distortion growing out of such cases and restorable with difficulty if at all, just as an inflamed joint becomes anchylosed or a stoop or twist or callus becomes fixed and irremediable. The neuron is a growth, a structure, and not a mere reservoir, and it is possible that those delicate networks which induce the action of other and yet other cells, so delicate that until a very few years ago no one had even suspected their existence, may be just as confirmed in their abnormal connections as if they were bones.

It is not impossible that we may one day see the growing sclerosis of the intellectual centres as we do that of the spinal cord, or recognize under the microscope that ideas have been so long centred upon self and suffering that it is as impossible for them to take any other course as it is for the electric fluid to go through a bad conductor to do useful work after it has established a short circuit in another direction.

Attention constantly turned in upon its own painful surroundings impedes healthy mental action as an ingrowing toe-nail impedes healthy locomotion.

We have then, as the simplest form of invalidism, the chronic neurasthenic, not perhaps melancholy or unhappy, but sensitive, self-observant if not selfish (and how indignantly would she repel this insinuation), hypochondriac and useless.

A very curious and important variety of this class is one which seems to have etiologically no connection therewith, but, which, when it progresses, shows so many common features that we cannot help acknowledging a close relationship between them. This is the invalid with nothing to do, and who requires a household to help her do it. She has had no hardships, she has studied moderately at school, and perhaps has had a fall or an acute sickness, but she does not convalesce beyond a certain point, and is, or thinks she is, as helpless as the other. She is apt to think that all she wants is "rest," when she has never done anything that ought to tire her, and has done nothing but rest for years.

If we apply to the nervous end of the motor apparatus certain well-known principles which are familiar enough in the pathology of muscle, the paradox diminishes. Muscular atrophy from overwork is recognized, and often persists when the overuse is discontinued. The "writer's cramp" is a not altogether dissimilar condition. On the other hand, we have the atrophy from disuse, as in the limb kept too long in splints.

The same sort of judgment that is needed to know when the passive and active motion of an injured limb should be begun must decide when nervous rest should give way to exercise of the will.

It is when a fixed idea has grown and flourished upon the soil of neurasthenia that we get the most thorough going and confirmed invalidism. This fixed idea may be of gradual growth from long habit, or a more rapid one from shock, forming the centre around which revolves the whole thought and being of the patient. On the other hand, according to the language now employed in the analysis of hysterical and hypnotic phenomena, it may reside in the subliminal consciousness, controlling thought and emotion without rising into the level of the patient's ordinary knowledge, and to be best discovered and combated by means of hypnotism.

Here we find the hysterical neuroses, the anesthesias, the paralyses and contractures, the obstinate vomitings, the neuralgias and aphonias of the severer and more chronic types.

We meet here even actual organic changes in the form of muscular wasting, stiffening of joints and muscles, not yielding permanently to passive motion or temporarily to anesthetics. Perhaps even scleroses may be developed.

Whatever may be the anatomical and clinical changes in nervous structure resulting from long disease or the dominion of the fixed idea, there is little doubt, clinically speaking, that some influence may, after a time, render the lesion as permanent as if it were of the most pronounced and organic character. As tersely expressed by a witty friend, "nervous protoplasm is endowed with a long memory."

At what period this takes place and after how long a time, we can only approximately judge in cases where some part affected is accessible to vision and manipulation, as in the case of contracted limbs, or by the electrical reactions and the conditions of the reflexes.

It is perhaps a somewhat rash assumption to infer that psychic lesions and those of the limbs under their influence run parallel to each other, but actual trial is the only trustworthy test in either case, and it is, of course, much easier to apply to the latter condition. Where skilful and assiduous massage and passive motion fail for months to produce any return of flexibility to joints or strength to muscles, it is highly probable that the psychic condition will be found equally obdurate. In one case, where the massage of stiffened and resisting limbs was successful, and after a time the patient became able to walk, it seemed to me that the obstacle in the nerve centres was quite as great as in the limbs, and certainly much longer lasting.

The point, expressed in anatomical language, is to know how far in the first place the paths of conduction from motor centre to muscle are intact, how far there is simply enfeeblement of the centre, and lastly how far an apparent enfeeblement is counterfeited by inhibitory impulses from other cerebral centres, and in particular such as are controlled by the subliminal consciousness or a fixed idea. In other words, how far the motionless limb is actually paralyzed, how far the patient cannot will to move it, and how far she thinks she cannot move it.

The influence of shock, not in the surgical sense, nor meaning concussion of the nervous centres, is of great importance. Not a few of our patients refer their ultimate break-down, usually not as the whole cause but the determining one, to a mental shock, frequently, for instance, the sudden death of a friend. It seems capable of taking the place of much chronic cause of depression, and, where the conditions are such as to receive and emphasize its full effect, to be as permanent in its action as the slower forms.

The question of real and visible lesion in the so-called "traumatic neurosis" and the relation of mental shock to physical concussion in such cases has been much discussed. If, as shown by Hodge and others, constant slight irritation produces organic and visible changes in the nerve cell to which it is transmitted, it is reasonable to suppose that an extreme but short series of irritations may do something similar without the intervention of any gross lesion whatever. Railroad cases are almost certain to be complicated in this respect, for it is almost impossible to exclude the influence of both mental and bodily shock.

The clinical manifestations of a purely psychic shock are, however, manifested as clearly and sharply ~~as~~ can well be imagined in a case reported by Dr. Jelly in the *Boston Medical and Surgical Journal.*

A man, previously healthy and temperate, fell, without losing his consciousness, on the track in front of a rapidly approaching train. He was practically uninjured and managed to roll quickly off on one side, so that the express train passed close to him without touching. This man lost his speech for many days, and for months manifested the most extreme form of nervous prostration and hysteria, with special dread, as is not to be wondered at, of anything connected with the sight or sound of railroads.

A somewhat similar case is reported by Derode, *Arch. de Neurol.*, March, 1895. A girl was barely rescued from death by a train, but without injury. Loss of consciousness, hysteria and melancholia. Experts called it traumatic neurosis, hysteriform, probably incurable. But there was no trauma except psychic.

We find in the history of our 1,000 cases, shock mentioned 60 times, and accident no less than 109. In a large proportion of the latter a fall is specified, and not unfrequently a fall upon the back.

It is true that it was not always claimed that the fall was the only, or even the chief cause of the nervous condition, but it frequently occupied a very prominent position in the patient's mind. Only a very few of these accidents seem to have been severe, and in fewer still was there any question of damages, so that the element of "expectant pecuniosity," as it has been pithily called, was not in them at all. But for all this the fall was undoubtedly a factor in the psychic condition of the patient, and although the hope of damages may, in appropriate cases, undoubtedly be a hindrance to recovery, it has had very little importance with us.

A victim of the "Bussey bridge" disaster, who, as in so many cases, was able to walk some distance immediately afterward and lost strength only after some hours, came to us the second time long after damages had been finally settled, and yet in a condition of partial paraplegia which was supposed to be, and from the rapid improvement evidently was, of a purely functional character.

In all probability nine-tenths of these falls would have been utterly without significance in persons of normal psychic stability, while, occurring in those having the hysterical diathesis, congenital or acquired, a nervous over-impressionability, they form a very important factor in making the chronic invalid of the quiet but pronounced type.

Melancholia should hardly be included in our scheme of chronic invalidism, not, of course, because a melancholic is not an invalid and a very serious one at that, but because it is something more and also something less; more as regards the immediate severity of the symptoms, which often brings it distinctly into the class of insanity and less in regard to its average chronicity. I cannot agree with my learned and philosophical predecessor and friend, Dr. Edward Cowles, in considering melancholia merely a further development of neurasthenia, although there are certainly very close connections between the former and the acuter form of the latter; and although it must be acknowledged that neurasthenia may put on the melancholic type.

Melancholia seems more like a self-limited disease with a beginning, a middle, and an end; although, of course, like other self-limited diseases, it may in unfavorable cases run into a chronic condition.

Neurasthenia has a beginning and a middle distinctly enough, but a vague and uncertain ending. I believe the statement to be a sound one that the prognosis of neurasthenia is unfavorable, not in proportion to the apparent severity of the symptoms, but in proportion to the time during which they have been present.

Melancholia appears to fit much more easily into an auto intoxication theory, possibly of intestinal origin, than the milder, more chronic, but more obstinate hysteroneurasthenia, with its more purely psychic origin.

One of the remarkable points about some of the most typical melancholias, which makes a highly important distinction from neurasthenia, is their absolute causelessness, so far as can with the utmost care be discerned, in the environment. It is seen in those who have not a visible care in the world and from whom no inquiry can elicit a trace of secret sorrow. In the acuter forms of neurasthenia the apparent cause is usually simple and more nearly adequate, in proportion, that is, to the resisting power of the particular nervous system in question.

Some years ago I saw a man who had just been taking a trip abroad for a profound and causeless depression for which he found no relief. He assisted in detailing the circumstances of his life. Of excellent habits, irreproachable reputation, freedom from pecuniary trouble, with a steady occupation involving no overwhelming responsibility, and in which his employers allowed him to take his own course, some literary employment which gave him much or little to do as he liked, he pointed out to me the blessing he enjoyed of an excellent and exemplary family to whom he was devotedly attached, a pleasant residence and other material sources of happiness with which he was surrounded. Yet in three days after this conversation he knelt down in front of an express train.

The typical neurasthenic invalid does not kill herself.

If it were possible to devise a scheme for promptly and infallibly restoring the chronic nervous invalid to working power or even to the point where she would no longer be a burden, the benefit to the community would be somewhat like that which comes from diminishing the cases of phthisis or typhoid in adding to the effecting working force of the world and diminishing the amount of non-effective labor. The invalid is likely to belong to a class, to be of the time of life and possess the mental capacity to make her working ability of great importance to her friends and the community. Her restoration to usefulness makes life easier for herself and a circle around her. I am not of those who can see in a multitude of beautiful examples and teachers of patience a sufficient recompense for the suffering and waste of life and opportunities. Involuntary teachers of patience are useful up to a certain point and I think they will never fail; but that profession is overcrowded with those who can never do anything else and calls for no amateurs. The deficiency is not in teachers but in scholars. What is of quite as much importance is that some of the most distinguished professors of this branch of instruction do not do it well. Patience under afflictions which can be removed is no virtue, and the "sweet sufferer" does not elevate the moral tone of the neighborhood so much as might be supposed, especially when it begins to doubt the genuineness of the specimen exhibited as an object-lesson.

It may be supposed from much that has been said that fattening and blood-making are not always sufficient for a cure, a fact already familiar. We have seen the invalid who is fat and florid, and, on the other hand, the thin and apparently anemic doing useful and trying work without breaking down. If the circulation can carry a limited amount of healthy blood from the digestive organs to a healthy brain it will do the work, even if the mass be small and it does not brighten the cheeks or stop on the way to deposit adipose tissue. It is another case of the nimble sixpence better than the slow shilling.

Still it is undoubtedly better to have the soundest, most substantial and securest foundation to build upon. Business can be done upon a small capital, but it is more secure from accidents upon an ample one. We are not to neglect or look with indifference upon the building up, so far as possible, of the general nutrition. In fact we can look for little success when there is an absolute failure, and not merely an apparent partial one, in this respect. Except the improvement of essential symptoms which we are seeking to remedy, there is no other one test of success which is so trustworthy as a gain in weight; and it may precede the others. Only one need not be utterly discouraged if the gain is not a very striking one.

The general nutrition is one of the handles to raise the patient from her condition of invalidism, and it is the easiest to get hold of. Unfortunately one handle is apt not to be enough.

Corresponding to the feeding should be suitable attention to the excretory organs, and for this purpose one soon has to become familiar with the whole range of laxatives, no matter how advanced his theoretical views as to the treatment of constipation by diet, electricity and massage. An occasional old-fashioned mercurial is not to be despised. Nitrogenous elimination is to be promoted by the use of water, sometimes slightly alkaline, though this is not usually of great consequence.

To think of rest as a new discovery for the cure of fatigue would be equally ingenious with inventing a food cure for hunger, but, for all the apparent simplicity, mistakes are possible in the application of both remedies.

If we consider again the physiology of fatigue and repair, as shown in the nerve cell, which we may regard as the differential of that highly complicated function, cerebral activity, we find that it is a matter of a few hours, so that in the birds, for instance, which were examined by Hodge, it was embraced within the limits of day and night. Although we know very well that human cerebral activity may continue much longer under special excitement, there has never been the least reason to doubt this diurnal period is the least exhausting, as it has always been the usual and natural one.

Even a shorter period has its advantages, especially in the way of prevention. The American business man's hurried lunch might well be developed into the usual dignified siesta of hot countries.

We cannot be too firmly convinced that the nerve cell is a living growth and not a mere reservoir. The figure of speech often made use of in describing the origin of neurasthenia, that is, as a bank account constantly drawn upon without corresponding deposits, is an extremely erroneous one in the respect of implying that, no matter how low the amount may go, it can be set right again at once by a single sufficient sum. This is certainly not true of nervous exhaustion in the more chronic forms.

The neuron has two functions or modes of action; one is to originate and transmit stimuli either to a muscle or to another neuron, and the second to maintain its own capacity for the conversion of energy. The first of these is necessarily carried on at the expense of energy, with definite chemical changes, but the second is a more subtle inherent property dependent on heredity, education, and many other influences, the dimunition of which is purely pathological.

Too great a prolongation of the period of fatigue, too many and too unremitting repetitions of the slight irritation, a shock too great for the normal reaction, produce not only a drain of energy but more or less impairment of the capacity for reproduction, or an actual change in the habit of growth, so that it is no longer capable of being made whole, either by a full supply of nutritive material or simply a prolonged rest, equal to the period of fatigue. If we wished again to resort to the business simile we might compare the nervous system not to a bank account, but to a manufacturing establishment where the demand for its products and for dividends has been so great that nothing has been spent to replace the worn-out machinery, and it has finally come to a forced standstill. Then, not only money but time and labor must be spent to get it into working order again.

We know that healthy function is not restored by rest alone. We do not expect to bring back motion to the paralyzed limb by putting it in a starched bandage; and activity is to be restored to the disused neuron by gentle and increasing exercise, just as it always is to the disabled muscle. The point at which this is to be begun is the point where the judgment of the physician is needed. Perhaps in the future some of the tests of the psychological laboratory may give us a more definite standpoint.

How common it is for a patient of this class to tell us how she has been set back by what she considers premature attempts to get up and do something, and, on the other hand, how often does the suspicion arise that what is supposed to be profound exhaustion comes extremely near to indolence, fear, habit, and want of confidence. One is often obliged to defer somewhat to the views of the patient and her friends and proceed with more timidity than his own fears would dictate. Delay and caution may be called for, not because there is real danger, but because it is necessary to establish a relation of confidence with the patient, and avoid the suspicion of rashness.

The question of sleep covers a good deal of the same ground as that of rest, but not the whole. It is not unusual to meet with patients who get a very fair proportion of sleep in the twenty-four hours and are yet incapable of mental effort during the remainder. In others it seems that the return of sleep is much more a consequence and sign of returning nervous vigor than simply a means of establishing it. Without it we can hardly hope for a sound recovery, but it does not follow that because the normal daily expenditure of nerve force can be completely made up by the nightly rest, or even that of two or three days, that the accumulated deficiency of a year can be made up by a corresponding number of extra hours. The nerve cells have not only expended their energy as fast as produced but have lost the capacity for storage.

What has just been said applies chiefly to the plain and simple forms of nervous exhaustion. The case is different when the fixed idea, conscious or unconscious, is added: when the machine has not only its driving force diminished but when some foreign body blocks the wheels.

Feeding and rest cannot always, perhaps I might almost say can never alone, dislodge this. It is probable that general nervous depression favors the domination of the fixed idea just as under-feeding does infection by acute febrile disease, and undoubtedly a restoration of general health and strength is of as great advantage in the one case as in the other. Sometimes it is the only thing which can make a complete cure possible, but a nervous warp or twist may be as obstinate as one involving bone and ligament. We see this in the most striking way in inherited mental traits which are as permanent and distinct as features, color, size, or disease tendencies. Insanity breeds as true as phthisis and more so. Acquired tendencies, are, indeed, often much less permanent, but the fixed idea is not the same thing as a whim of the imagination.

The psychic element in invalidism is to be controlled by psychic means.

We find among those who have been with us and who have been discharged without complete or permanent relief, no inconsiderable number who refer their recovery, or what they consider as such, to some one of the many forms of empirical treatment, now so much in vogue under names familiar to you all, which have, like other fads before them, been erected by their cultivators into a kind of religion. I do not suppose that our inquiries have resulted in anything like a complete account of these cases. We have known of some who have not reported themselves, a few have stated that they tried so and so with no good result, and it would not be human nature if the favorable cases were not more readily reported than the unfavorable ones. Such things have happened in more scientific circles. Making all allowances, however, I think it is well to look the fact squarely in the face that some persons do receive great benefit from some of these forms of treatment who have failed to do so at the hands of regular and skilful practitioners. These cases should be studied and not contemptuously waved aside. *Fas est et ab hoste doceri.*

Presumably most of us believe that the days of miracles are over, and that these cases do not furnish any exceptions to the ordinary laws of mental physiology.

But we have not to look to these sects alone for cures of this character. They have been happening under all sorts of names and schemes. Besides those openly claimed as wonder cures it requires no great stretch of the imagination to suppose that many such attributed to this or that drug, spring, bath, or physician, have been of this character. They swarm, more or less well interrupted, in medical literature.

There are those, even among our neurological brethren, who hold that many of the good results of electrical treatment, especially by the static current, are largely due to their psychic influence.

Notorious practitioners have removed fictitious tumors and opened abscesses for which they had themselves to provide the pus, charging extortionate fees in order to keep up the "moral" effect. Medical and religious history abounds with the records of cures made by appeals to the faith and imagination in all sorts of ways, and it is generally well recognized that they are wrought largely in the class of cases we are now discussing.

It is not, however, a very dignified position for a physician to occupy when he makes such explanations for the first time for the purpose of belittling some cure of the kind which has been reported to him. They are probably perfectly correct, but, when brought forward at such a time, they lay him open to the very obvious retort: "Well, if you knew all about it why did not you get the same result?" or, "Why did you wait for somebody else to make a cure before you made a diagnosis?" Such questions as these we should ask ourselves with calm judgment rather than wait to have them asked of us sarcastically at a time when the true answer cannot be looked upon otherwise than as a mere excuse for failure.

The answer is twofold. First and foremost, physicians *are* constantly doing the same thing consciously or unconsciously. They always have done it since there were physicians, and always will, no matter what the changes of pathological and therapeutic theories. The physician is not likely, like some politicians, to ostentatiously parade "personal magnetism" as a portion of his outfit, but he may have it, and it is undoubtedly true that, other things being equal, he who possesses the complete confidence of his patient will have the best results, without reference to the subordinate consideration that the patient will follow his directions most carefully.

This fact is sufficiently well recognized, but, for the very reason that it is every day and commonplace, it is frequently lost sight of. If an invalid recovers under the care of her trusted family physician her friends are satisfied indeed, but not astonished. It is not heralded through the sewing circles, the social calls and the confidential chat as a wonderful event. It was the doctor's business to cure her and he did. Good doctor, but no miracle about it. If, however, the case does not go so favorably; if he fails to impress her imagination, being nothing but a plain, common-sense practitioner, with no halo of specialism, no romance, no slight uncanny flavor about him, and she then goes to a miracle-monger and recovers, the case is very different.

Let me briefly mention three illustrative cases: One of the earliest patients of the Adams Asylum, in answer to our inquiries, attributes her cure, which has been a permanent one, to "mental healing," but further describes the process as having been convinced by the physician of the asylum that the organic disease of the stomach, which she was sure existed, was not real.

A second convinced herself that the promises of the Bible as to cure by faith were made to her, just as well directly, as through the hands of any other person. She had faith and was made whole. Her own account of the case was published and she has been a useful woman for many years.

The third suffered, with a perfectly serene countenance, excruciating pain. I find that she was discharged "relieved," but she went to another institution where a person, at that time well known, prayed, laid his hands upon her, and she got up and walked. The case obtained considerable newspaper notoriety at the time and the patient became an apostle. She, however, now thinks that a year's rest at the asylum would do her much good.

The physician possesses the advantage over the charlatan of a knowledge of pathology and diagnosis. The charlatan possesses the advantage over the physician of ignorance of exactly the same things. The air of confidence is a very subtle one and the perceptions of the patient acute. She is apt to know well whether the physician is telling her what he fully and firmly believes himself, or whether he is making some mental reserve, and his influence is controlling or the reverse accordingly. How can he assure a patient that her vomiting is purely nervous when the faint suspicion lurks in his mind that his encouragement may be interrupted by a hemorrhage or perforation, or tell her that her headache, though painful, is not dangerous, when the next hour may reveal to him a double optic neuritis? The curist knows or cares nothing about these possibilities, and the corresponding confidence in his voice and bearing are tempered by no hesitation or reserve. He may also steal from his rival, and get a working diagnosis ready made.

The patient who has gone from one physician to another and another seeking relief from symptoms which get no better and no worse, for which no organic cause can be found, may be shrewdly suspected to belong to this class; or at least the charlatan can do no worse than his learned and distinguished predecessors, even if he fail; while, if he give assurances stronger than their knowledge of pathological possibilities allowed them to do, he may accomplish that for which they only paved the way.

Why one person should have this effect more than another it is indeed difficult to say, but no more so than in many other situations where personal influence seems to rest on anything but the reasonable foundations that one would naturally expect.

A former patient, a bright, intelligent girl, suffered after her discharge from constipation as she had done before. After trying various persons she at last settled upon one practitioner of a popular fad as the one for her.

"What does she do?" she was asked.

"Oh, she sits and looks out into space."

"And what do you do?"

"Oh, I sit and look out into space. Then I go home and have a movement of the bowels; but I can't do it alone."

There is no reason to suppose, however, that this influence is of any extraordinary character. There is nothing in these psychic therapeutics to induce a belief in any communication of nervous force or in any telepathy. The influence undoubtedly reaches the nerve centres of the patient through the ordinary channels of the senses, and the recuperative force just as undoubtedly originates there. It is simply set free by an external stimulus, or else the opposing inhibitory force of the fixed idea is removed.

There is no doubt that the peristaltic activity of the intestines is under nervous control, and that there is a continuous connection of the local plexuses with the highest nerve centres. Yet we are only too well aware that no amount of reasoning on the propriety of setting that mechanism in action, and no amount of firmness of intellectual conviction is sufficient to produce the desired result; but we know that habit, without conscious cerebral action, sets the apparatus in motion, and also that an unusual cerebral impression entirely disconnected with any idea of intestinal action, like fear, for instance, may do so.

It appears necessary that the influence which is to promote such a psychic change as must take place in cases of hysteria and consequently in many of chronic invalidism, that which is to make the cerebral hemispheres again resume their control of the muscles, which is not merely to diminish the extreme sensitiveness to pain and fatigue, but inhibit that active search for it so commonly seen; that which is to set flowing again that nervous current which promotes nutrition; in a word, that influence which cures, whether in the hands of the physician who has studied the case and who knows it scientifically, or of the charlatan who makes no pretence to such knowledge and shrewdly guesses at it from the failures of his predecessors, must reach that psychical region that is not in full view of the ordinary consciousness, the so-called subliminal consciousness.

It is apparently in some lower stratum of cerebral action that intellectual convictions are moulded into confidence, desire and activity, and there also apparently the same convictions may arise without the intervention of distinct perception or logical reasoning. There are those who hold that this region may be reached most quickly and certainly through hypnotism, that is, the patient is made more receptive and suggestible thereby. We have seen how it is reached by methods which have but little to do with the reason, and much with mystery and marvel. It is certain, however, that these are not the *only* channels through which an impression can be made, and it seems probable that when the physician, by beginning with the ordinary consciousness and by oft-repeated direction and encouragement, sometimes amounting to a re-education, can stimulate the motor powers of the will and set them free from the inhibitory control of fear, habit and hypochondrical delusions, the result is quite as complete and permanent a one. This comparison, in my relative inexperience with other methods, I make with considerable diffidence.

Different persons in their normal mind vary immensely as to their persuasibility and reasonableness, and the hypnotists recognize as well the same distinction in the susceptibility to their influence. It is probable that the two qualities are closely allied if not the same, and it seems not only reasonable but strictly in accordance with observed facts to suppose one avenue of approach more practicable in one set of cases and another in another.

A firm conviction, unreasonable, unaccountable, absurd, even almost unacknowledged by the patient, is a more powerful moving force than an intellectual conclusion, no matter how soundly based upon facts and logically constructed, but if the one can be made to support the other, no matter which goes first, we have a more active and constant force than either alone can give. The learned and skilful physician can argue with his patient that having no organic disease and having thoroughly rested, she ought to get well. If he can make her thoroughly believe it she will get well, but if only half-persuaded that she is going to do so, it may require the mysteries of some patent cure, perhaps in the hands of an ignoramus (and more effective for that very reason), something which impresses the feelings as well as the intellect, which soaks into the lower stratum of consciousness, to complete the work and give that little shock which shall start the machinery already in working order but motionless.

Many of the agencies of the simplest character in use in the treatment of nervous invalidism are of value, not so much because they actually contribute strength, as because they convince the patient that she already has it. Gymnastics are of quite as much value because they oblige her to take a definite initiative without hesitation and on order, which massage and electricity do not do, as because they increase muscular strength. They undoubtedly do good by promoting muscular development, but they do at least as much by convincing the patient that she can herself move her muscles with ease.

There is often no more obstructive frame of mind on the part of a patient than a highly logical and intelligent one, or, better, the belief that she has such a one and the desire to exhibit it.

An argumentative patient can always have a reason ready, if she be inclined in that direction, why each thing that is ordered by her physician is exactly the wrong one for her, however well it may be adapted to those of ordinary mould.

As we all think —

> " Whene'er we groan with ache or pain,—
> Some common ailment of the race,—
> Though doctors think the matter plain,—
> That ours is a peculiar case."

Pride in her own case is a sentiment which it is highly important to retain upon the side of the physician. If it take the form of an ill-concealed exultation over its difficulties and obscurity, or the patience with which sufferings are borne, the number and distinction of the physicians who have been consulted and their discomfiture therein, it is naturally a most unfavorable element. If she say in effect, "I defy you to cure me," she will probably be the victor. But if it move in the opposite direction and the patient, whether from her own usual mental condition or led by persuasion and personal influence, or some less commonplace motive, believe that she is standing on a higher mental or moral plane than her neighbors, or that her recovery is phenomenal, and that she is performing wonderful feats of strength and endurance, it is of the greatest value. She is your strongest ally.

Expectant attention is a very different, and for therapeutic purposes a much better thing than argumentative and combative attention. In a receptive condition, either natural or induced, the truths of which the patient may have been previously intellectually convinced, assume a controlling position over the will and motor functions. The doctrine becomes a force.

Nervous invalidism is a psychosis, and the study of it is a branch of morbid psychology.

It is very possibly associated with actual changes of a chronic character in the neuron, analogous to those which have been found as the result of fatigue.

It is, to a considerable extent, the consequence of congenital conditions, or of heredity, that is, of the transmission of an enfeebled or distorted nervous system.

On this basis the fully developed condition may be acquired at any time, though most easily in youth, either gradually or as the result of special strain or shock or acute disease.

It varies from pure nervous exhaustion on the one hand, to pure hysteria and insanity on the other, but most chronic cases stand somewhere between the two extremes.

The foundation of a rational treatment is a diagnosis, a diagnosis by exclusion, not simply a recognition that the patient is weak, anemic, hysterical and nervous; but a conviction so founded on a thorough examination, and so firm that it can be confidently imparted to the patient, that the symptoms do not depend upon structural disease of the organs with which they appear to be connected.

There are no organs which may not be involved, but by far the most commonly so, and calling for the most circumspection in diagnosis and care in treatment, are the pelvic and digestive.

On this foundation the treatment consists of three essentials, any one or two of which may take the lead in the individual case.

Food to furnish material for the growth of the neurons.

Rest to give time for them to appropriate it and to grow.

Mental and moral control, by stimulating healthy function, to restore their lost tone and activity.

A Death from Joy.— It is stated in *Le Progrès Médical* that a certain notary who was serving a five years' term of imprisonment at Riom, was informed by the inspector of prisons on a recent visit that two years of his sentence had been remitted. On hearing the unexpected good news, the prisoner fell dead. Whether a post-mortem examination was made is not stated, but it seems probable that it must have been some cardiac lesion which thus transmuted a pardon into a death sentence.

Original Articles.

NOTES ON THE REPAIR OF RUPTURE OF THE PERINEUM THROUGH THE SPHINCTER ANI.[1]

BY W. L. BURRAGE, M.D., BOSTON.

My excuse for bringing the subject of complete rupture of the perineum before this Society, a subject that has been gone over again and again in the medical societies and the medical press of the world during the last twenty years, is my conviction that in spite of the amount of attention it has received, the matter is not properly understood by the profession. This is instanced by the large number of complicated operations invented for the repair of this injury, and, from my observation of the operation in the hands of prominent operators, where I have found that a very considerable proportion of the operations have been failures either in restoring the function of the sphincter or in leaving the patient without a proper perineum. I have reference to the secondary operation.

It is in the hope of provoking discussion on an important subject that I shall state my views somewhat dogmatically.

Operators advocate flap splitting, the use of the rectal tube after operation, a preliminary operation on the rectal tear followed later by a closure of the vagina, keeping the bowels constipated for a week or ten days after operation and other measures that I believe are faulty in principle.

The problem of the closure of a complete rupture of the perineum is a comparatively simple one after we have studied Emmet's conclusions and mastered his technique. There has been a great deal said about Emmet's operations for lacerated cervix and perineum; but, from my observation few operators who have not seen him do these operations have grasped his ideas. It is a sufficient commentary to note that one of the leading American text-books of gynecology, published only four years ago, has an entirely erroneous description of his perineal operation for rupture of the pelvic floor.

Although there have been some valuable additions to Dr. Emmet's procedures since he first called the attention of the profession to the repair of complete rupture of the perineum some twenty-five years ago, notably the stretching and paralyzing of the sphincter fragments before operation and the early moving of the bowels after operation, I think I am right in saying that we owe a correct understanding of the repair of these injuries to the genius of the Grand Old Man of Gynecology.

The location and form of the common tears of the perineum have been shown by Reynolds[2] and more recently by Dickinson.[3]

Granting what Dickinson says, that complete rupture never takes place in the median line, nevertheless, when these tears are seen some months or years after the injury, their general appearance is, as he says, median. Not only are they median, but in a majority of cases that have come under my observation, there has been no appreciable damage to the pelvic floor, beyond the rupture of the perineum and the sphincter ani. Whether this is due to the fact that there was no original injury to the pelvic floor, or that the injury has been repaired by cicatrization, I cannot say. This is shown by the close apposition of the posterior and anterior vaginal walls and by the absence of prolapse, conditions that do not obtain when there has been appreciable damage to the levator ani and pelvic fascia.

Clinically it is important to draw a distinction between injuries to (1) the pelvic floor proper (the levator ani muscle and pelvic fascia); (2) the perineum (the external muscles and tendons, transversus perinei, and bulbo cavernosus); and (3) the sphincter ani. For we are able to distinguish between these three sorts of injuries and we adapt our measures for repair to each. For instance, after the parts have cicatrized we cannot say whether the bulbo cavernosus or transversus perinei muscle has been torn; but, by means of our sense of touch and by noting whether the floor of the pelvis is up against the anterior vaginal wall, as in the normal condition, we can say whether the pelvic floor is injured. We can also estimate, by sight as well as by touch, the external tears and the tears of the sphincter ani. Now, if the pelvic floor has suffered injury, it is probably in one or the other sulcus, as shown by Reynolds, perhaps in both; and it must be repaired by denuding in the sulci and catching up the sundered structures, according to the rules laid down by Emmet. If, on the other hand, the injury has been to Group 2 or 3, to the perineum proper or external muscles and to the sphincter ani, the repair is effected by bringing the separated parts together by sutures passing through the divided structures straight across from side to side.

In complete rupture, so called, or rupture involving the sphincter ani, it has been my observation that in a majority of cases the injury is, as I have said, limited to Groups 2 and 3. Therefore, the operation for the repair of this condition is much simpler than if it involved also the repair of the pelvic floor.

The appearance of the parts when cicatrization has taken place is about as follows: (Fig. 1.) The sphincter ani, torn in two, is retracted, the ends being represented by a small dimple in each buttock. The concave retracted sphincter forms the lower margin of the anal orifice, the upper margin being made by the more or less torn recto-vaginal septum. It is usually V-shaped, with the apex of the V above. The mucous membrane of the rectum is everted, red, and covered with mucus. The posterior vaginal wall at the apex of the V is in apposition with the anterior vaginal wall. The patient suffers only from incontinence of feces and gas.

The operation for the repair of a torn perineum should be undertaken as soon after the receipt of the injury as possible, that is, at the conclusion of labor, if the patient's strength will allow. At the primary operation it is possible to make out with more or less accuracy the individual muscles that have been torn and to draw together their ends. At the secondary operation, after cicatrization, this is rarely possible. The primary repair is effected by means of stitches of silkworm gut passed straight across from side to side, entering the needle at a quarter of an inch from the torn edge of the vagina on the left side at the highest point of the rent. The point of the needle is brought out at the edge of the rectal mucous membrane, reinserted in a similar place on the opposite side, and out again on the vagina on the right side at a quarter of an inch from the edge. Stitches are placed a quarter of an inch apart, and extend from the uppermost limit of the rent in the vaginal septum to the superficial stitch in the sphincter. The remaining steps of the operation are precisely the same as for the secondary operation to be described shortly, except that there is no denuding to be done, and the tissues being soft and edematous it is of especial importance not to tie the sutures too tightly. The after-treatment is the same.

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[1] Read before the Obstetrical Society of Boston, May 11, 1895.
[2] Transactions American Gynecological Society, 1891.
[3] American Gynecological and Obstetrical Journal, vol. vi, No. 5.

There is no doubt in any one's mind that at this stage the object of the operation is to restore as far as possible the original condition of the parts. I speak of this fact because later on when the secondary operation is under consideration we hear of "building up a perineum," and many operators seem to be devoting their energies to manufacturing some sort of an artificial dam at the vulval outlet; something that, when built, does not much resemble anything seen in nature, as I can testify by frequent observation. My aim in doing the secondary operation is to restore the natural relation of the structures of the perineum and sphincter. The burden of proof rests with those who claim to improve on nature.

The secondary operation for the repair of a complete rupture should be undertaken as soon as the torn edges have cicatrized. If a primary operation has been done and has been unsuccessful and followed by induration of the surrounding tissues, a sufficient time must be allowed to elapse for the tissues to regain a healthy condition or the secondary operation will not be a success. It may take several months of treatment with douches to prepare the parts. This is a point often overlooked.

The advantage of operating reasonably soon after the receipt of the injury is that the sphincter ani muscle becomes atrophied from long disuse; and the results obtained from operations done several years after are not as good as those done several weeks or months after labor. I have, however, operated on two cases eight years after the rupture in each case, and obtained a perfect result with both.

The operation about to be described has proved uniformly successful in my hands, both in restoring the sphincter ani and in bringing back the normal contour of the perineum. It is Emmet's operation, that I learned at the Woman's Hospital in New York, with several modifications suggested by experience. The principal points to be remembered in the operation may be grouped as follows:

(1) Preparatory treatment.
(2) Preliminary stretching of the torn sphincter muscle.
(3) Method of denuding.
(4) Passing of the sutures.
(5) Fastening of the sutures.
(6) After-treatment.

Inattention to the details of any one of these six groups will lead to failure. Success lies in careful and painstaking attention to minute details. It goes without saying that the operation should be aseptically conducted, the vagina and vulva being first thoroughly scrubbed with green soap, water and a nail-brush and then with corrosive (1–2,000). The instruments and sponges are sterilized and the operator's and assistants' hands and arms rendered aseptic. In operations on the vagina and anus, especially where the rectal mucous membrane is exposed, absolute asepsis of the operation field is impossible. Clinically, I have obtained the best results by sponging the tissues occasionally during the operation with 1–8,000 corrosive. On account of the excessive vascular supply of the parts, the corrosive does not interfere with the nutrition, but seems to promote primary union.

(1) The preparatory treatment consists in getting rid of all traces of suppuration and induration in the tissues by douching, and in thoroughly opening the bowels for a week before the operation. For the latter purpose a five-grain pill of ox-gall three times a day, and castor oil forty-eight hours before the operation, followed by an enema the morning of the operation are to be recommended. Thorough attention to the bowels is of extreme importance because of the danger of scybalous masses passing the sphincter during the first days following its restoration. To further ensure there being no hard masses in the bowel the diet should be restricted to broths and soups for two days before; milk being forbidden.

Fig. 1

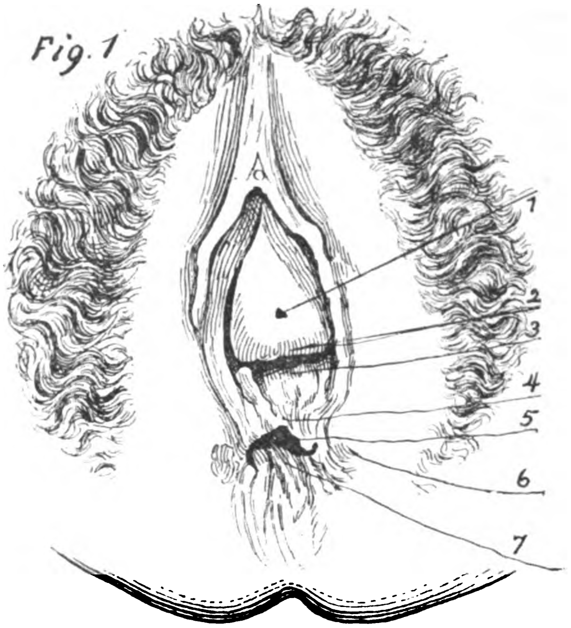
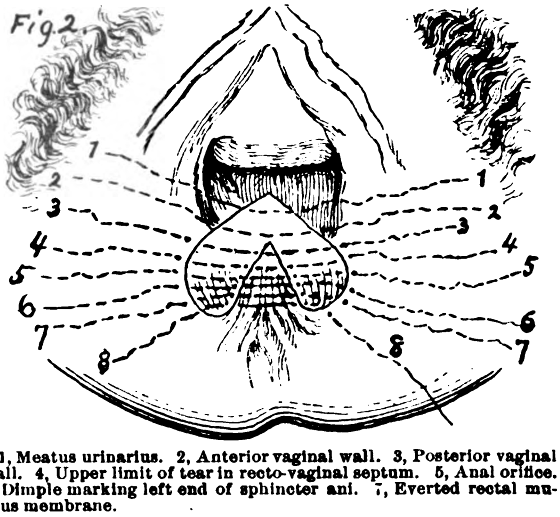


Fig. 2



1, Meatus urinarius. 2, Anterior vaginal wall. 3, Posterior vaginal wall. 4, Upper limit of tear in recto-vaginal septum. 5, Anal orifice. 6, Dimple marking left end of sphincter ani. 7, Everted rectal mucous membrane.

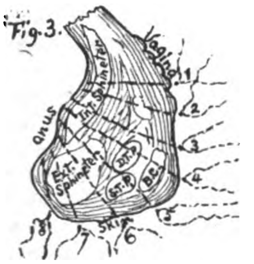
The patient should be given three prolonged, hot vaginal douches (temperature of 120° F.) the day before, and one the morning of the operation. This douching very much lessens the amount of oozing, an important consideration both for the patient and for the operator.

(2) The chances of success are much increased by following the rule in all rectal operations, namely, First stretch the sphincter. It may be argued that the sphincter has been already not only stretched but torn in two. Very true; but it has been in a state of rest since it was torn, and is in addition contracted. The moment the torn ends are stitched together and the patient is out of ether the irritation from the accumulation of gas, or the pain from the operative bruising of the parts, causes reflex contractions of the muscle that must interfere with a successful result. The thoroughly stretched muscle remains paralyzed for about forty-eight hours. Having stretched the muscle the bringing of the ends out of their pockets and the stitching of them together is made much easier and the edges of the rectal mucous membrane make better apposition. The stretching is done by grasping the tissues firmly on one side over the dimpled cicatrix with the thumb and forefinger of one hand and holding this point fixed, while with the thumb and forefinger of the other hand, the surrounding tissues are forcibly pulled away from it. Then the fixed point is transferred to the opposite side and the pulling repeated. Several minutes are devoted to this procedure. I regard it as of the first importance.[4]

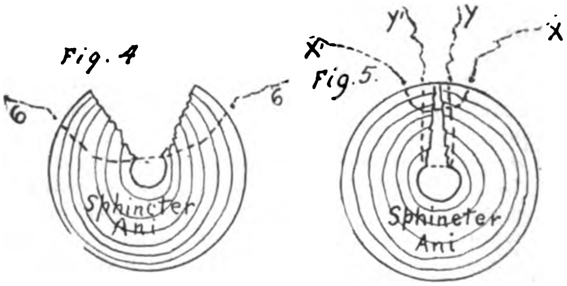
(3) The denuding should begin below over the dimples marking the retracted ends of the sphincter, and in these situations should go deep enough to reach muscle tissue. For this purpose I catch the dimpled cicatrix with a tenaculum and raise it up and then cut it out with the scissors. The denuding is carried on from below upward because by this plan the blood from the upper parts does not hinder the work below. Above, in the vagina, the denudation should go at least half an inch beyond the upper limit of the rectal tear. It makes the line of union firmer to have two or three stitches above the beginning of the opening into the rectum. The cicatrized margin of the rectal mucous membrane must be carefully refreshed. The limits of the cicatricial tissue are the limits of the denudation throughout. On the outside the uppermost caruncle is the highest limit of the denudation. Scissors are preferable to the knife, because by the pinching action of the scissors on the tissues the bleeding is less. Dr. Emmet has used scissors exclusively in his plastic work for many years.

Cases of recto-vaginal fistula and cases of rupture of the major part of the sphincter without complete division of all the fibres, are treated by cutting through the sphincter muscle and then treating the case exactly as if it were a complete tear originally. In this way only is it possible to denude the edges of the rectal fistula properly or to restore the function of the sphincter.

(4) The sutures should be of pure silver wire, No. 29, and the wire should be polished. Copper wire, silver-plated, is not pliable enough. The same fault attaches to the larger sizes of wire. The first stitch is taken at the apex of the denudation in the vagina (Fig. 2). The needle (I prefer one with a round point, an inch and a quarter long and slightly curved at the point) is entered a quarter of an inch from the left-hand edge and buried until it emerges at a corresponding point on the opposite side of the wound. When the gap in the rectum is reached, the point of the needle is brought out so that it just misses the rectal mucous membrane. It is then reinserted on the opposite side so that it misses the rectal mucous membrane there and thence through to emerge on the surface of the vagina. The stitches are a quarter of an inch apart beginning above and ending at the anus, all straight across as described.[5] When the ends of the sphincter ani are reached, the point of the needle is made to dip down deeply so as to pass through the entire thickness of the retracted end of the muscle as described on page 397 of Emmet's book, "Principles and Practice of Gynæcology," 1884. (Figs. 4 and 5.) It is often well to hold up the end of the muscle with a tenaculum while the needle is being passed, thus ensuring that the entire thickness of the end of the muscle is included and that the needle passes far enough from the ends. Two deep sutures are passed in this way and one superficial, which brings the outer edges of the muscle into apposition. I have not used the stitch formerly advocated by Emmet that ran from posterior to the ends of the sphincter up through the lower border of the recto-vaginal septum, because passing through the other sutures at an angle, it constricts the tissues and is apt to cause an abscess. Emmet himself has not used it for several years now.



Antero-posterior section of perineum, not in median line.



x, x' shows stitch improperly passed. y, y' and 6, 6 shows stitch properly passed; 6 corresponds to 6 in Fig. 2.

Dr. Emmet stated in 1873 that after years of study, he had arrived at the conclusion that the cause of failure in perineal operations involving the sphincter, was chiefly owing to a faulty method of passing the sutures through the sphincter, and he published then, what is now generally conceded to be the proper method. It is to be noted that in passing the sutures there is no elaborate scheme to be followed; they are all passed in the same way, except those through the end of the sphincter, which are placed deeper than the rest, as described. The greatest possible care must be exercised to make the stitches equi-distant and considerable time and attention are necessary to do this properly. Perfect apposition of the lips of the wound is to be aimed at. No cicatricial tissue is to be left in denuding and no raw surface is to be left at the end. It is to be noted that no rectal stitches are used. These are hard to place, hard to remove and, to my mind, quite useless.

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[4] It is fair to say here that I have to-day received a letter from Dr. Emmet in which, although endorsing the chief views expressed in this paper, he says that he has not stretched the sphincter and does not believe it necessary.

[5] It is to be noted that the line from the fossa navicularis to the anal opening on the outside skin surface, is the arc of a larger circle than is the line from the apex of the rectal tear to the anal opening on the anterior surface of the rectum, therefore, the stitches are farther apart from the fossa navicularis to the anus on the skin side and nearer together on the rectal side. "They radiate here like the sticks of a fan," as Emmet expresses it. That is to say, they are more than a quarter of an inch apart outside and less than a quarter of an inch apart on the rectal side. (Fig. 3.)

The operation is an almost exact counterpart of that for vesico-vaginal fistula. In the latter operation no stitches are placed in the bladder mucous membrane. Why should any be put in the rectal mucous membrane?

(5) If silver wire is used, each suture should be shouldered and then twisted through the shield, beginning above in the vagina and ending at the anus. The shield should be used, not as I have often seen it used, simply as an instrument to hold the tissues down while traction is being made on the wires, but as furnishing a sharp edge over which to bend the wires until they are twisted. The rule is to get the proper tension and then twist until the wires cross at the shield. The tension on the stitches must be carefully graduated, experience alone telling what is the proper amount to employ. It is a common fault to get them too tight. The twisted ends in the vagina should be cut off about three-quarters of an inch long and folded down as Dr. Emmet does it. Those on the outside should be clamped, each with a perforated shot at a distance of a quarter of an inch from the skin and the ends cut off in the shot, thus leaving no sharp points projecting. Before twisting the outside sutures, it is essential that the patient's feet should be brought down so that they rest on the table, because the lithotomy position, in which the rest of the operation is performed, puts the perineum on the stretch. This point has a bearing on the after-treatment, as we shall see.

The use of silver wire requires a special training. If an operator has been unable to make himself familiar with Emmet's ideas on this subject, he had better not use it but use silkworm gut instead. Wire makes an ideal suture material. Besides being perfectly strong, non-porous and capable of being rendered aseptic, it forms when properly placed a splint for the tissues while union is being established. Fastening the ends of the sutures with shot is much superior to the older method of enclosing them in a tube, as, with the shot, they are less likely to get caught on the clothing and they are much easier to keep clean.

(6) The after-treatment is as important as the operation itself. Formerly it was the recognized treatment to keep the bowels constipated for ten days or two weeks, feeding the patient on beef-tea and chicken broth, until they were moved. This method had the disadvantage of being unnatural, uncomfortable, and of leaving the patient very weak from the lack of nourishment when she began to sit up. By this method also, it was thought necessary to keep the patient's knees tied together, until the stitches were out and to keep her on her back continuously. And besides, the urine had to be drawn by catheter. Simplicity in technique has now taken the place of all these precautions. It is not many years since it was thought to be essential that every laparotomy case should be kept flat on the back for at least forty-eight hours after the operation.

Any one who has had the care of women operated on by the older methods has a pretty vivid idea of the suffering that is entailed by constipation of ten days, nothing but beef-tea for nourishment, not being allowed to turn over in bed, and the frequent use of the catheter, even if the patient was fortunate enough to escape a cystitis. Afterwards came a long tedious convalescence.

The after-treatment I employ in cases of rupture of the perineum through the sphincter is as follows: At the conclusion of the operation the vagina is douched with corrosive, the parts about the vulva are dried with a sterile towel and the patient is put to bed. The motions of the patient in bed are restrained only until she is well out of the ether. Then, unless she is a nervous and excitable person, she may be turned on her side carefully by the nurse for the sake of variety and to ease the backache. If, on the contrary, she is wilful and difficult to control, she must be kept on her back for twenty-four hours, because in this way only is it possible to prevent twitching about. Excessive flexure of the thighs on the abdomen and separation of the knees while in this position are the only two postures that put the perineum on the stretch. The patient if left to herself is not likely to put herself into these positions. Twitching about is objectionable because the wound is likely to be rubbed on the bedclothes. Any reasonable amount of abduction of the thighs with the legs extended is in no way harmful, therefore there is no need of tying the knees together except as a reminder to a nervous patient to keep still.

The patient is to pass water voluntarily if she can. Every effort is made to avoid the use of the catheter, because even when it is used a few drops of urine always get on the wound. Therefore why not let the urine run freely over the perineum. After the use of the catheter, no matter how aseptic it is, of what material made, or how carefully it is passed, a certain proportion of cases have a resulting cystitis, which much prolongs the convalescence and leaves the bladder in an irritable condition. Each time after micturition the nurse separates the labia and squeezes a little warm water from a piece of absorbent cotton over the parts. She performs the same office after every movement of the bowels. Twice a day, night and morning, the parts about the vulva are bathed with warm corrosive (1–5,000).

The diet is limited to gruels and broths for three or four days, the object being to have the nourishment concentrated and with as little resulting fecal matter as may be. At the end of this time the patient has semi-solid diet and when she gets up solid food.

The bowels are moved on the morning of the next day following the operation with a saturated solution of Epsom salts, a teaspoonful of which is given every half-hour until the bowels move a little, or until five doses have been administered. The salts are repeated each day in sufficient quantity to cause two or three fluid movements in every twenty-four hours. This is the rule until the stitches come out on the eighth day.

By the method of treating the bowels just outlined all danger of scybalous masses passing the sphincter and spoiling the result is avoided. The amount of fecal matter that often accumulated in the lower bowel at the end of ten days of treatment by the constipating plan was surprising; and it was a job of considerable magnitude, necessitating a great deal of manipulation, many enemas, and sometimes even digital evacuation to establish a free rectum. Many newly united sphincters were unable to stand the strain put on them in this way. By moving the bowels early and often there is no trouble with flatus. No rectal tube is necessary, and therefore no dilating of the sphincter, and the pushing of a hard, unyielding foreign body by the line of union. No enemas are necessary. The less the operation field is handled the safer I feel as to the result. Should there be a great amount of soreness about the wound I have two small pieces of linen or gauze soaked in Pond's Extract and water, equal parts, placed one on each side of the shotted sutures and kept wet. As a routine, one corrosive douche of two quarts (1–5,000) is given twenty-four hours after the operation, to cleanse the vagina of any blood that may have collected there. No further vaginal douche is given until the stitches are removed.

The patient sits up on the tenth day, and is about in two weeks.

Emmet gave utterance to most of the ideas advocated in this paper at least ten years ago. Six years ago I was first impressed by the results obtained by stretching the sphincter before operation and moving the bowels soon after, and found them far better than by any other method. Since then I have operated by that method, and have had uniformly successful results; and it is because of these favorable results, and because I believe the correct principles of repair are shown in the technique, that I have ventured to call your attention to the subject anew.

The points that seem to me to be of especial importance are the preliminary stretching of the sphincter; thorough attention to the bowels, both before and after the operation; and in operating in the simplest manner possible, that is, by using only one set of interrupted sutures passed straight across.

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Clinical Department.

TWO ILLUSTRATIVE CASES OF POSTERIOR POSITION OF THE OCCIPUT.[1]

BY CHARLES W. TOWNSEND, M.D.

Although the simple expedient used in these cases is well known to the members of this Society, cases of posterior position are so often mismanaged that it seems worth while to allude occasionally to the subject.

This has been brought to mind recently by a case where I was called by two consultants to do craniotomy. I found the head presenting at the pelvic brim, occiput right posterior, and slightly extended. Numerous attempts had been made to drag the head through the pelvis, which naturally resulted in failure. Besides this the forceps had slipped and the child's scalp was torn in one place down to the bone.

It was a simple matter under ether to make an accurate diagnosis of the position, and thus determine the cause of the trouble. Many physicians seem to be satisfied with the diagnosis of head presenting, without an accurate diagnosis of position. Even if the sutures and fontanelles are obscured by a caput succedaneum, it is always easy, at least under ether, to feel an ear which determines the exact position.

With one hand in the vagina the head was easily turned from O. D. P. to O. D. A., the shoulders and body of the child being turned at the same time with the other hand placed externally. Keeping the head in this position by an assistant's hand placed externally, the forceps (with Reynolds' traction-rods) were applied, followed by an easy delivery of a living child weighing eight pounds.

Another case, seen a few weeks ago, was a primipara with the child presenting in the rare O. L. P. position. This position is not so very exceptional as some suppose, for I have seen six or eight examples of it.

Here I kept the head well flexed but it refused to rotate, owing to inefficient pains. After a second stage of two hours, the head and body were easily rotated as described before. The head was held in place by the hand in the vagina while the blades of the forceps were applied. This is perhaps the easiest method and the one I usually employ. A living child weighing nine and one-half pounds was brought into the world with some difficulty over an intact perineum.

If the forceps had been applied without rotating the head, or if version had been done, it is evident that the child's chances and those of the perineum would have been small.

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A CASE OF APPARENT HERMAPHRODITISM.[1]

BY FRANCIS MINOT, M.D.,

The patient is dressed as a woman, is twenty-five years old, tall, muscular and of dark complexion. There is no beard, the breasts are masculine, the voice base. Has never menstruated.

The clitoris is of the shape and appearance of an ordinary glans penis, with a prepuce which partially covers it, but is cleft below, presenting exactly the appearance of a circumcised organ. In the place of the meatus is a simple depression. Below the clitoris is the urethra, and below the urethra is the entrance to the vagina with a hymen. The finger easily penetrates into the cavity for about an inch, no cervix or other organ being felt. Both the labia are normally developed, but nothing can be felt within either, but she says that something is apt to come down into the left labium when she strains much; and on her making a "bearing down" effort, a hernia is seen to protrude into it.

She says she has no sexual desire, and has no voluptuous sensations in the clitoris, and her mother says her daughter does not seek the society of men.

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Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY EDWARD REYNOLDS, M.D.

CELIOTOMY FOR ECTOPIC GESTATION.

Werder[1] writes on celiotomy for ectopic gestation at or about term, and reports an interesting case in which he made the diagnosis at six months and operated about two weeks before the expected time of term, keeping the patient under observation in the mean time. After opening the abdomen, the case proved to be a tubal pregnancy ruptured primarily into the cavity of the broad ligament, and secondarily, into the general abdominal cavity, a portion of the child being covered only by its own membranes. After the removal of the child it was found that on the upper and left surfaces of the sac there were numerous and firm intestinal adhesions. While the operator was endeavoring to separate these, he was interrupted by a severe hemorrhage from the placenta at the bottom of the sac. This was arrested by clamping the ovarian artery with one forceps and some branches of the uterine artery with another. The placenta was then removed with very little loss of blood. The free portion of the sac was excised, the remaining portion gathered together by silk sutures and secured to the parietal peritoneum and drained. The recovery was uneventful. The child had club feet, marked asymmetry of head and face, etc., but did well until the third day, when its temperature rose, and it died on the fourth day, probably from pneumonia. This was, when reported, the seventeenth successful case of the delivery of a living ectopic child by celiotomy at or near term. In twelve of these, the placenta and part of the wall of the sac were removed; in five, both sac and placenta were left and drained. Werder advocates the removal of both sac and placenta whenever it is possible, and thinks that by securing the ovarian artery and the branches which connect it with the uterine artery, as in this case, it will be possible to accomplish the removal of the placenta in the majority of cases. In his case a severe hemorrhage ceased as soon as these vessels were secured. When it is impossible to remove the placenta, he recommends allowing it to empty itself of blood through the cut end of the cord, stripping from it the amnion, cutting the cord close in order to remove as far as possible all these lowly organized tissues, and then shutting the wound without drainage. This he does in the belief that after ligature of the ovarian artery, the placental blood-supply will be so lessened that prompt shrinkage will be effected, but that sufficient circulation will be left to maintain life; and he regards the risk of this procedure as less than the risk of sepsis, etc., from the sloughing away of the placenta. He would reopen the abdomen only in the presence of symptoms which call for it.

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[1] Read before the Obstetrical Society of Boston, May 11, 1895.

[1] Read before the Obstetrical Society of Boston, May 11, 1895.

[1] Medical Record, 1894, No. 21, vol. xlvi.

Edebohls[2] reports a case in which he removed a tube from which an ectopic ovum was in the act of escaping. The patient was brought to him when apparently about two months pregnant. The history was not characteristic. On examination, a globular tumor was found behind and to the left of the uterus. It was about two inches in diameter and sensitive on pressure. The cervix was patulous and soft, with some eversion of the mucosa; everything else normal. Celiotomy was advised. About two teaspoonfuls of decidual detritus was removed from the uterus on July 10th, and the abdomen opened. About an ounce of free blood was found in the peritoneal cavity. The left tube and ovary were shelled out of some soft adhesions and removed. The ovum was in the act of passing through the abdominal ostium of the tube, about one-third of it being in the abdominal cavity, the remaining two-thirds still within the tube. There was no rupture of the tube wall.

A METHOD OF TREATING PLACENTA PREVIA.

Dührssen[3] describes a method of treating placenta previa by the introduction of an intra-uterine, or more properly, an intra-oval colpeurynter. The cervix being large enough to admit two fingers, the membranes are ruptured, the folded colpeurynter introduced within them and distended with not more than half a litre of water. The operator then makes steady traction upon the tube connected with the instrument, and so compresses the detached portion of the placenta against the uterine wall by pressure from within. The author reports six cases treated by this method in which all the mothers did well and five children were born alive.

[This method is evidently applicable only to cases of marginal or slight lateral attachment; and while the method is certainly physiological and sensible, it must be remembered that a large proportion of such cases do well by simple rupture of the membranes, after which the presenting part compresses the placenta against the uterine wall under the force of the intra-uterine pressure. For cases in which this result does not follow, the use of the colpeurynter is worth bearing in mind.]

SYMPHYSEOTOMY.

Assistant-Surgeon Shah[4] operated on a Hindoo woman with a conjugate diameter of about two and one-quarter inches. The membranes had ruptured and the liquor amnii drained away. Two previous children had been born by spontaneous labor, but the patient had been a cripple from rheumatism since the second birth. The operation was subcutaneous, the tendons of the recti muscles being also severed. The pubic bone was separated two inches, and the child was born a half-hour later by spontaneous labor. The child was asphyxiated, and although it was resuscitated, died soon after in dyspnea. The wound was covered with iodoform, a tight pelvic bandage was applied, and the patient was in good condition three weeks after the delivery.

Garrigues[5] did symphyseotomy in a case complicated by a pelvic tumor. The pelvic bones separated five inches; the wound suppurated and required the use of a drainage-tube. The pelvis was immobilized by rubber adhesive plaster. The patient left the hospital on the thirty-fourth day after the operation, with no signs of the tumor apparent. The child did well, but three months after delivery the mother's gait was waddling; she complained of occasional pain in all three joints of the pelvis, and had some cystocele. The lower portions of the pelvic bones were separated by half an inch; the upper portions were in apposition.

Philander A. Harris[6] reports two symphyseotomies. The first was done on a primipara with a three-inch conjugate. The operation was done by the open method. The symphysis separated but a little over an inch. A ten-pound child was delivered by forceps alone, and the mother made an uninterrupted recovery.

In the second case the conjugate was a little under three inches, the left leg was half an inch shorter than the right and the synchondrosis was a quarter of an inch to the left of the median line. The position was posterior, and delivery by forceps failed. The operation was again by the open method, the separation one inch. This, however, was due almost wholly to the motion of the right side, the left being apparently anchylosed. An eight-pound child was delivered by forceps. The sharp corner of the left side of the pelvis perforated the anterior wall of the vagina and made a groove over the right frontal portion of the child's head. The mother made an excellent recovery and was free from pain or difficulty of any kind at the end of two months with firm union of the symphysis. The child did well.

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[2] American Journal of Obstetrics, January, 1895.

[3] Deutsche med. Woch., 1894, No. 19.

[4] Indian Medico-Chirurgical Review, 1894.

[5] Medical Record, 1894, No. 19.

[6] American Journal of Obstetrics, 1894, vol. xxx, No. 6.

[Two of these four cases (Shah's case and Harris's second case) were done in patient's who would not ordinarily be considered fit subjects for symphyseotomy, which makes the good results which followed them, especially interesting. The difficulty in locomotion which followed in Garrigues's case was probably due to the occurrence of suppuration, and is a fresh reminder of the importance of absolute asepsis in this operation.]

SIGNS OF MATURITY AT BIRTH.

Frank[7] studies the value of signs by which the maturity of a child at birth can be determined. He concludes that there is no one sign or set of signs which are by themselves sufficient to establish maturity. He thinks the classical reliance upon the length of the finger-nails, the presence or absence of lanugo and the size of the epiphyses is unsafe. A subnormal temperature in a non-asphyxiated child is in his opinion indicative of prematurity. To the attainment of average length and weight he attaches much importance. Finally, he believes that the proportion between the girth about the shoulders and the circumference of the head is of considerable value. When the shoulder girth is greater than that of the head, the child is usually mature. If the circumference of the head is not at least 32 cm. the child is almost certainly premature. He concludes wisely that it is often not possible to decide positively whether a child is or is not at full term.

LABOR COMPLICATED BY HEART DISEASE.

Hirst[8] reports his experience in the conduct of labor complicated by heart disease as very much more fortunate than would be gathered from the literature of the subject. In his large experience he has so far never lost a patient from this complication, although he has attended some of the most severe type, of which he reports briefly, four. His communication is devoted mainly to outlining the treatment which he has adopted. He recommends that in addition to the ordinary care of diet, regulation of bowels, limitation of exercise and exposure to cold, the pregnant woman with heart disease should have iron and strychnia, and either digitalis or strophanthus, in larger doses than would be given to the same patient were she not pregnant. The urine should be examined more frequently and more critically than it usually is in pregnancy. Labor should, as a rule, be induced prematurely, both in order to secure an easier labor and to avoid the strain upon the heart which is incidental to the increased pressure of the latter days of gestation. In labor he recommends the use of large doses of digitalis and strychnia until the os is of the size of a dollar. Then, in vertex presentations, he applies forceps and extracts the child as rapidly as possible, with a minimum regard to the integrity of the maternal tissues and without anesthesia. In several cases he has made deep incisions of the cervix to facilitate the delivery, and thinks this plan has a double advantage to the woman. It not only shortens her labor and saves her the fatigue of a voluntary muscular effort in the second stage, but it ensures a hemorrhage from the lacerations along the birth canal after the delivery of the child, which latter factor Hirst considers the best safeguard against engorgement of the lungs and overstrain of the heart after child-birth. During delivery a hypodermic syringe filled with a nitro-glycerine solution and some pearls of nitrate of amyl should be close at hand. No ergot should be given, and post-partum bleeding when within bounds, should be encouraged. The binder should be tight enough to partly compensate for the sudden diminution of intra-abdominal pressure, and should be applied at once.

DISINFECTING THE HANDS.

Reinicke[9] has experimented extensively upon the value of different methods of disinfecting the hands. He obtained the best results from the following method: The hands were thoroughly brushed with a mixture of green soap and alcohol for not less than five minutes; then again in alcohol for the same time, and finally in an alcoholic solution of corrosive sublimate 1 to 1,000. This was found to be efficient in destroying germs, with a minimum of damage to the hands.

RUPTURE OF THE UTERUS.

Gessner[10] reports two cases which were brought into the clinic of the University of Berlin after rupture of the uterus. In the first case there was a transverse presentation, with a prolapsed arm and cord. While preparations for version were being made, the uterine contractions stopped and the cord ceased pulsating. There was no hemorrhage. The child was extracted by the attending physician and easily resuscitated. But on examination a complete rupture of the uterus was found and the patient was at once taken to the clinic, where Olshausen performed celiotomy. The rent was sutured, gauze drainage was employed, and the patient made a good recovery. In Gessner's second case labor was delayed by hydrocephalus. Forceps had been applied, but failed to lock and were removed, no traction having been made. The patient was then sent to the clinic, where craniotomy was done and rupture of the uterus found. The rupture was probably not complete, and was treated by gauze drainage without celiotomy. This patient also made a good recovery.

Cholmogoroff[11] reports an interesting case of complete rupture of the uterus. The patient had a justo-minor pelvis of moderate size, and had had four difficult labors, the last terminated by craniotomy. The fifth pregnancy was normal, but labor was ushered in by hemorrhage of moderate degree. A midwife, who was in charge, ruptured the membranes, but as labor failed to advance, sent her into the hospital. On admission, the long axis of the fetus was parallel to that of the uterus. The os was fairly dilated; the fetal heart sounds were absent; the breech was at the pelvic inlet, S. L. P.; the right foot was on the same level with the breech; hemorrhage persisted, but was not excessive; the right foot was drawn down, and extraction of the child was attempted, but the hemorrhage continued. The extraction was most difficult, and was only accomplished by perforation of the after-coming head, the opening being made through the palate. After the extraction, a moderate hemorrhage continued, and an examination showed a transverse rupture of the uterus just above the cervix. The placenta lay among the intestines, and the fetus had also been partially in the abdominal cavity. The hemorrhage was sufficient to demand suture of the rent, and as the first part of the labor had not been aseptically conducted, it was thought that the peritoneum was probably infected. The peritoneum was irrigated through the rent with a two-per-cent. solution of boracic acid, a Sims speculum was passed, the borders of the tear were drawn down with tenacula, and it was closed over the greater part of its extent by sutures. At the left angle of the tear an opening sufficient to admit two fingers was allowed to persist. Through this opening strips of gauze were passed into the abdominal cavity and the lower ends allowed to remain in the vagina. The hemorrhage now ceased, but on account of the absence of asepsis during the earlier portion of the labor, the uterine cavity was lightly tamponed with iodoform gauze. The intra-uterine gauze was removed on the fourth day, the intra-abdominal on the eighth. The patient had a mastitis, but otherwise did well.

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[7] Archiv für Gynäkologie, 1894, Band 48, Heft 1.

[8] American Journal of Obstetrics, March, 1895.

[9] Centralblatt für Gynäkologie, 1894, No. 47.

[10] Loc. cit., 1894, No. 2.

[11] Zeitschrift für Geburtshülfe und Gynäcologie, Band xxxi, Heft 1.

PERFORATION OF THE UTERUS.

Mann[12] reports three cases of perforation of the uterus after abortion, with prolapse of intestine through the rent. The first case was brought into the Buffalo General Hospital with the following history: The patient had herself passed a No. 8 catheter with its stylet its full length into her uterus. There was no pain, and she was not conscious of any harm. She was supposed to be between two and three months pregnant. The next day she had pains, and on the following day sent for her physician, who passed his finger into the cervical canal and felt what he supposed were the membranes. The next day he dilated the cervix with a steel dilator, and with the aid of a sharp curette and his finger removed the ovum. But on again introducing his finger, he felt that there was something still within the uterus. This he caught between his finger and curette and pulled down into the vagina, believing it to be another portion of the membranes. As it seemed large and shortly refused to advance, he looked at it through a speculum, and then found that it was the small intestine completely torn across. An hour and a half afterwards, the abdomen was opened in the Buffalo General Hospital, the uterus being first curetted and packed with iodoform gauze. The ileum was found to have been torn across to the ileo-cecal valve, and to have been separated from the mesentery for fully six inches. The head of the colon was enlarged and injected with blood, and its peritoneum was torn in several places. The opening in the fundus-uteri admitted the finger. The abdomen contained a small quantity of blood and feces. The mesentery was tied off with catgut, the abdomen washed in sterilized water and dried with sponges. The whole head of the colon, with the ileo-cecal valve and the separated portion of the ileum, was turned in until it was out of sight, and the peritoneum brought together with sutures. The other end of the torn ileum was then trimmed off and united to the colon in its continuity by Murphy buttons; the perforation of the uterus was closed with catgut and the abdomen drained. She left the hospital at end of three weeks in good condition.

The other two cases were not under Mann's observation, but were reported to him by the physicians concerned. In the first, a noted gynecologist dilated the uterus with steel dilators and put in a placental forceps to pull down the ovum, but, instead, drew out intestine. He was away from home, unprepared for celiotomy and unable to get assistance, but being anxious lest the patient should be harmed by delay, he opened the abdomen, drew the intestine back, and closed the uterine wound with sutures. The patient died of a septic peritonitis within forty-eight hours. In the second case an inexperienced physician dilated the uterus with steel dilators, passed in the forceps and drew down the small intestine. Instead of replacing it or preparing to open the abdomen, he lost his head and kept on pulling until he had drawn out six feet of gut. He thought it the intestine of the fetus; but as the fetus was only three months old, the mistake was a strange one. After realizing that it was the maternal intestine and that he could not get it back, he cut it off and sent for a consultation. The patient naturally died; and as Mann remarks, dryly, the patient's family, fortunately for the physician, remained in ignorance of the cause of death.

The article closes with a plea for care in the use of dilators after abortion, at which time the uterus is much more easily torn than in the non-pregnant condition. The success of Mann's own case shows that the most desperate cases of this accident are not necessarily followed by death; and the absence of hemorrhage in large numbers of previously reported cases of perforation of the uterus, hints that it is best to take whatever time may be necessary for making adequate preparations for celiotomy rather than to indulge in a hurried and probably necessarily slovenly operation, as in the second case.

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Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Regular Meeting, May 11, 1895, the President, Dr. James R. Chadwick, in the chair.

Dr. W. L. Burrage read a paper entitled

NOTES ON THE REPAIR OF RUPTURE OF THE PERINEUM THROUGH THE SPHINCTER ANI.[1]

Dr. C. M. Green would agree in the main with what the reader had said. He had not, however, been accustomed to stretch the sphincter ani before operation. As to the results of treatment he had had only two cases that were not complete successes; one of these being his first case of the kind, and one he had operated on too soon after the primary operation. For the rectum he always used catgut, closing this wound before he passed the perineal sutures. For the latter he uses silver wire.

Dr. F. H. Davenport said he avoided disturbing the patient by a long preliminary treatment, attending to the bowels only twenty-four or forty-eight hours beforehand. He is sure that stretching the sphincter is an additional point of value, and he has adopted it.

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[12] American Journal of Obstetrics, May, 1895.

[1] See page 108 of the Journal.

For the rectal tear he has used a running catgut suture, using for the perineum during the last two years silkworm gut in place of silver wire as it adapts itself better to the tissues and is more easily removed.

Dr. G. Haven used silkworm gut entirely now, and has not regretted giving up silver wire. He also closes the rectal wound as described by Dr. Davenport.

Dr. J. R. Chadwick gave up silver wire fifteen years ago. He has given up catgut for the rectum as not holding well and swelling so much, and he has used silk instead. He has never stretched the sphincter and he fails to see how it can be done forcibly enough to be of any service.

Dr. W. L. Burrage, in closing, said that the stretching of the sphincter could be accomplished without much trouble, and was of great advantage.

Dr. Charles W. Townsend reported

TWO ILLUSTRATIVE CASES OF POSTERIOR POSITIONS OF THE OCCIPUT.[2]

Dr. G. Haven had within a week attended a case where the position was O. L. P. Here he had rotated and delivered in the manner described by Dr. Townsend. He had seen some three or four cases where the position was O. L. P.

Dr. C. M. Green said that although this method was often used at the Boston Lying-in Hospital it was not, he believed, described in text-books. He considered it a great obstetrical advance.

Dr. G. Haven said the secret of success in these cases is holding the head in place, otherwise, it was very apt to turn back before the forceps are applied.

Dr. C. M. Green said that it is very important to turn the body by the hand placed externally, at the same time that the head is turned. In some few cases this is impossible, but this is exceptionable. In these cases podalic version would be resorted to.

Dr. Francis Minot reported

A CASE OF APPARENT HERMAPHRODITISM.[3]

Dr. F. W. Draper said that the case suggested an extreme hypospadias in the male.

Dr. C. W. Townsend referred to a case he had reported to the Society two years ago[4] where the individual comprised certain characteristics of both sexes, so that it was impossible to say whether the patient was male or female or both combined. Here the clitoris or penis was an inch and three-eighths long in the flaccid state, and although the patient dressed as a woman, the hairy and muscular development resembled that of the male. There was a history of apparent menstruation and also of masturbation with discharge of fluid. The characteristics of the two sexes as found in this individual were as follows:

Male.	Female.
Muscular and bony systems.	
Breasts and nipples.	
Distribution of hair on body.	
Early alopecia of scalp.	
Partial descent of testicle (?).	
Seminal discharges (?).	
Undeveloped hypospadias penis.	Enlarged clitoris.
Cleft scrotum.	Labia majora.
Non-descended testicles.	Uterus.
Absence of regular menstruation.	Slight menstrual flow on three or four occasions, with molimina.

Dr. G. Haven showed a specimen of

CANCER OF THE UTERUS

removed by hysterectomy.

AMERICAN SURGICAL ASSOCIATION.

New York, May 28, 29 and 30, 1895.

(Concluded from No. 4, page 94.)

LIGATURE OF THE INNOMINATE ARTERY, WITH THE REPORT OF A CASE,[1]

was the title of the next paper, which was read by **Dr. H. L. Burrell**, of Boston.

The following paper was then read by title:

TWO CASES OF DISPLACEMENT OF THE ULNAR NERVE AT THE ELBOW, SUCCESSFULLY TREATED BY OPERATION,

by **Sir Wm. MacCormac**, of London.

The next paper was entitled

IMMEDIATE SUTURE OF THE GALL-DUCTS AND THE GALL-BLADDER AFTER EXTRACTION OF STONES, WITH CASES,

by **Dr. John Wheelock Elliot**, of Boston.

The author claimed that the operations of cholecystotomy and cholecystenterostomy have become too much the routine practice in the relief of gall-stones, and that incision of the ducts or the gall-bladder followed by immediate suture is the proper operation in the majority of cases, especially in recent cases. He reported five such operations; one on the hepatic duct, one on the common duct, and three on the gall-bladder. All have been successful.

Dr. Elliot's conclusions were as follows:

(1) Every operation should be conducted with the idea of restoring the functions of the ducts, and that any irreparable injury to them is a serious calamity.

(2) Immediate closure of the gall-bladder is safe if the ducts are clear and its walls healthy.

(3) Incision and suture of the cystic duct is preferable to prolonged manipulation.

(4) Incision and suture of the hepatic and common ducts is the operation of choice for impacted stones.

(5) The mortality of this operation is less than 18 per cent.

(6) If the condition of the patient is critical, a preliminary cholecystotomy is advisable.

(7) Cholecystenterostomy should be reserved for irremediable stenosis of the common duct.

Dr. S. J. Mixter, of Boston, read a paper on

CONGENITAL ESOPHAGEAL POUCH: EXCISION; IMMEDIATE SUTURE OF ESOPHAGUS; RECOVERY.

Mrs. E. C. H., fifty years of age, in January, 1893, experienced difficulty in swallowing. She had always had some difficulty in swallowing, but it was only four years previous to this that it grew so excessive. Esophageal bougies were passed, but without marked improvement, previous to admission to the hospital.

Attempts were made to pass esophageal bougies and probangs, but without success, they all being stopped about eight and a half inches from incisor teeth. Some regurgitation of food followed these attempts.

It was found, however, that a bougie of any size that could be made to pass the obstruction by hugging the right side of the esophagus, went on without difficulty into the stomach without being grasped as by a stricture. In three weeks she left, being able to swallow slightly better, but on March 12, 1894, she returned, having worn an esophageal tube most of the time, and having only been able to swallow soft solids and liquids.

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[2] See page 112 of the Journal.

[3] See page 112 of the Journal.

[4] See the Journal, March 30, 1893, p. 306.

[1] To be published in the Journal of August 8th.

The operation was an incision three inches long parallel to and in front of sterno-mastoid muscle. The omo-hyoid was divided, and the esophagus reached in the usual manner. The bulb of a probang previously introduced could be easily felt, and on dissection the pouch in which it was situated was easily isolated. An incision was made into the sac, whence the finger could be passed without difficulty up into the pharynx, and, after hooking it over a sharp edge of mucous membrane, down into the esophagus. The largest bougie (about three-quarters of an inch in diameter) could be easily passed into the stomach after the tip has been guided by the finger past the fold. The pouch, about the size of an egg, lay to the left and behind the esophagus. Enough of the sac was removed. to make the esophagus a straight tube from the "spur" up, and the edges were united with interrupted catgut stitches. The external wound was closed, with the exception of a small opening for gauze drainage wick. Recovery was perfect, and patient had had no return of the trouble when heard from recently, being able to swallow any kind of food.

This case is a perfect example of the true esophageal pouch, there being no constriction in the tube, and the obstruction to the passage of food being only the thin crescentic edge of the spur between pouch and esophagus, which, pressed against the opposite side of the esophagus, acted as a valve.

The paper included a summary of cases up to 1895.

DR. ROSWELL PARK, of Buffalo, read a paper

ON THE CONSEQUENCES OF HYPEREMIA AND THE PATHOLOGY OF INFLAMMATION AND SUPPURATION.

Purely mechanical and traumatic disturbances and surgical infectious diseases, especially their local manifestations, have about the same apparent beginning, and their local phenomena are in general the same up to a certain point, when there is wide variation in local manifestations and systemic complications. Heretofore all these manifestations have been included under the term "inflammation"; and we have been taught that inflammation at one time is congestion with slight exudation, at another hyperemia with copious exudation, or, at still another it leads to pus production, while at yet another its final result is hyperplasia and new tissue formation with more or less induration. Hence we have had described "simple," "acute," "infective" and "chronic" inflammation, etc.

Dr. Park's thesis was that the term "inflammation" ought to be confined exclusively to one distinct class of lesions, those produced by micro-organisms, and that the term "inflammation" should never be applied to those other lesions into which the question of infectious micro-organisms never enters, such lesions to have names based upon the pathological lesions.

It is well enough to say that all inflammation begins with congestion, and this may be true; but many congestions never terminate in genuine inflammation. Congestion should be described as the result of certain exciting causes, of which bacteria may be one; in which case the congestion itself is subsidiary and in a measure accidental or conservative.

In a violent sprain of the knee-joint we note the old *calor, rubor, dolor et tumor* of our forefathers, with disturbed function; this indicating that there has been dilatation of vessels, the redness being caused by hyperemia, the pain by tension and pressure on nerves, the heat by the same cause as the redness *plus* some more active chemical change, and the swelling by the escape of fluid into previously existing cavities. Let everything go well, and this fluid is quickly absorbed, the vessels return to their natural size, pain, redness and swelling subside, save for perhaps a little chronic thickening of the parts. Here are the phenomena of hyperemia, exudation and resorption; the first due to traumatic influences, the last to the conservative powers of the system.

This should not be spoken of as "inflammation." But let there be infection from any source, and let micro-organisms once secure access to the parts within, and how quickly is the whole clinical picture changed! We have not only purulent synovitis or pyarthrosis, but we have unmistakable, perhaps fatal, constitutional disturbances. This is inflammation: a condition of congestion and exudation *plus* the special disastrous characteristic, *infection*. Without infection, no genuine inflammation.

Dr. Park was inclined to endorse Metschnikoff's definition of inflammation, as a phagocytic reaction on the part of the organism against irritants in the shape of micro-organisms, the essential phenomena of inflammation representing an actual struggle between the phagocytes and the irritants — Virchow's "battle of the cells" — pus and pus-cells being simply *débris*, the dead bodies of animal cells slain in the conflict.

Dr. Park submitted a classification for text-book arrangement, commencing with hyperemia and congestion, then covering inflammation, that is, infection — the matter of pus-formation first in its pathological and then in its clinical aspect. He differentiated between the various substances known as "pus," and suggested the following names: For material produced in the course of an acute phlegmon, infectious, toxic, the good old name "pus"; for material from healthy granulating surfaces, or from raw tissues which have not yet had time to granulate, which is free from bacteria, and has no infectious or toxic properties, the name "pyoid" or "puruloid"; for the contents of old cold-abscesses which have long since lost everything except the grossest and crudest resemblance to the pus which it may originally have been, the name "archepyon."

There is more in all this than straining after accuracy, because the treatment in these different conditions is distinct and unmistakable, and would be unfortunate in either of the other states; real, genuine pus requiring the promptest possible evacuation, as pus left alone will do more harm than the knife of the surgeon if judiciously used; pyoid or puruloid material calling for little or no special treatment, except absolute cleanliness; and archepyon indicating a condition which calls for extirpation of infected tissue, complete and final disposition of that membrane formerly known as pyogenic membrane, eradication of all infected tissue, etc

The limiting membrane of old or cold abscesses is anything but pus producing, but, on the other hand, pus-protective, and hence to call this membrane pyogenic is a misnomer. Dr. Park suggested, instead, "pyophylactic." He raised some practical questions as to the extirpation of pyophylactic membrane in the average cold-abscess, and stated that where complete extirpation was impossible he excised so much as proper access could be had to, and then used a solution of chloride of zinc, 50 per cent. strength, to mop out the sinus after being curetted, or in case the curette cannot follow it, with which the sinus is injected.

If the pyophylactic membrane is not treated by extirpation, it is gradually made away with by granulation tissue, and the removal of its component parts by phagocytic action and substitution of granulations therefor. This process is liable to interruption or complete cessation, even to reinfection from organisms yet alive within its substance. Hence, the ideal method of dealing with this membrane is complete removal; next to this, complete destruction by caustic agents; and in default of these, the application of antiseptics and stimulating substances.

Dr. Park repeated the distinction made in 1890–91 between the obligate and the facultative pyogenic bacteria, the former including those whose function seems to be solely to set up septic disturbance and produce pus — the various staphylococci, namely, the staphylococci pyogenes aureus, albus, citreus, epidermidis albus, etc., and the streptococci; and the latter class including those which have only occasional pyogenic properties, such as the bacillus tuberculosis of Koch, the tetanus bacillus, the bacillus mallei, etc.

Dr. W. S. Halsted, in discussing the paper, spoke of some of the difficulties often encountered in determining what was present in a joint, that is, whether it be hyperemia or inflammation, instancing the fact that a subcutaneous injury about the knee-joint may give much redness, but this might not be due to micro-organisms. He alluded to a very interesting case, which was recently in the Johns Hopkins Hospital, of a man with endocarditis and sloughing of the valves of the heart due entirely to the ordinary gonorrheal organism. As to the part of Dr. Park's paper referring to granulation, the speaker stated it was very difficult sometimes to tell from the product obtained whether an infection had taken place or not. He thought that some of the names suggested by Dr. Park were good and worthy of consideration.

Dr. L. McLane Tiffany considered Dr. Park's idea a very good one, but the difficulty, in his opinion, was the determination whether or not a micro-organism was present.

Dr. John Parmenter, of Buffalo, agreed with the changes suggested by Dr. Park, of which he thought there certainly was great need. The problem in his opinion was, What is the causation of pus? In several cases he had been in doubt on this point.

Dr. Roswell Park stated that, in his opinion, if there had been infection by organisms, one would soon be made aware of the fact by the formation of pus, and if this did not occur it would be safe to assume that there was no infection.

Dr. Christian Fenger, of Chicago, then read a paper entitled

HERNIA OF THE BLADDER AS MET WITH DURING OPERATIONS FOR INGUINAL AND CRURAL HERNIA.

Dr. S. H. Weeks, of Portland, Me., reported

A CASE OF CHOLECYSTECTOMY.

The patient was a married woman, forty-seven years of age. For four years she had been subject to very severe paroxysmal attacks of pain in the upper part of the abdomen. The pain would begin in the right hypochondriac region and extend across to the epigastric and left hypochondriac regions, the pain also at times extending upward toward the right shoulder. It was most intense in the epigastric region, and extended upward to the neck in the median line. During the paroxysms she vomited freely, the vomited matter always containing a large amount of bile. Diagnosis of biliary colic due to occlusion of the cystic duct having been made, an operation was recommended, and was done eighteen days after her admission to the hospital, a vertical incision about four inches long being made external to the right rectus muscle at a point corresponding to the tip of the tenth rib. The gall-bladder was much contracted and contained from 12 to 15 small calculi, varying in size from gravel to a pea. After these were removed from the gall-bladder, Dr. Weeks passed his finger along the under surface of the cystic duct, and found it filled with a large calculus. This was removed by making an incision through the walls of the duct, and was found to be 20 mm. in its long diameter and 14 mm. transversely. After the removal of the stone from the cystic duct, the gall-bladder was removed, tying the cystic duct as high up as possible; but it could not be tied beyond the incision for the removal of the calculus, and consequently there was an opening through which bile could escape. A drainage-tube of glass was inserted well down to the bottom of the wound, and iodoform gauze packed freely about it. The gauze was packed into the wound during the operation upon the gall-bladder and ducts to protect the peritoneal cavity from blood and bile. Much pain followed the operation for several days, probably occasioned by the glass drainage-tube, and a rubber tube is recommended in preference, supplementing it always by gauze packed around the drainage-tube.

At first there were some disagreeable symptoms of pain in the side, vomiting and high temperature, a large amount of bile escaping from the wound; but five days after the operation she rested well, and about three weeks later was discharged from the hospital, the wound having completely healed and the patient entirely relieved of all her former symptoms.

Dr. M. H. Richardson, the Secretary of the Association, showed two stones he had recently removed. In the first case the stone was removed by a suprapubic operation, four weeks ago.

Dr. Roswell Park, of Buffalo, read the closing paper, entitled

INJURIES TO PNEUMOGASTRIC AND PHRENIC NERVES.

He stated that this paper was the result of a suggestion made two years ago at a meeting of the Association, when some one expressed the opinion that a table showing the results of injuries to these nerves would be of interest. He had made a collection of as many as possible, and said he would be glad if any members present could furnish him with the histories of any others. Injuries to the phrenic nerves seem to be much more dangerous than injuries to the pneumogastric.

Dr. Fenger said that he had histories of two cases which he would be pleased to contribute to Dr. Park's paper; on motion it was decided that he should do so.

Dr. Bradford handed around a photograph which showed what a good result had been obtained by a man sixty years of age, in the attempt to get motion in the knee-joint by tying weights to his feet, sitting on a chair, and throwing the weights off. In this crude way complete motion of the joint was restored, and the man has since been able to walk perfectly well.

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RECENT ACCIDENTS FROM ANTITOXIN.

In the *Revue Mensuelle des Maladies de l'Enfance*, March, 1895, MM. Guinon and Rouffilange report a fatality attending the use of Roux's antitoxin.

It was a case of diphtheria of medium gravity; patient a girl aged three years. The tonsils and part of the velum pendulum were well covered with false membranes; there was nasal catarrh and swelling of the glands on the left side. The serum treatment was begun on the third day. After a first injection of 15 c. c. the pseudo-membranous patches began to loosen and ceased to spread, and there was cessation of the nasal discharge, but the glandular swelling increased, and an eruption resembling urticaria appeared on the trunk and lower extremities, and the urine became slightly albuminous.

A second injection of 5 c. c. of serum practised the next day was followed by prostration, diminution of the quantity of urine, and increase of the albuminuria; the local state remained stationary; the adenopathy had lessened; the tongue and the lips were swollen.

The following day, after a third injection of 10 c. c., the anuria became complete; there supervened edema of the eyelids and a fetid diarrhea, with abdominal tympanites and vomiting; on the mucous membrane of the lips and fauces there was noticed a slight bloody exudation; the lesions of the throat remained unchanged but the adenopathy had disappeared.

The anuria as soon as recognized was combated by warm baths (water about 90° F.), subcutaneous injections of 40 c. c. of saline water (7 per cent.), full warm-water lavements, hot applications to the loins, and forced feeding with milk by means of the nasal tube. Under the influence of this treatment the urinary secretion was becoming re-established, when, three days after the last antitoxin injection, another injection of 10 c. c. was made, and this was followed anew by anuria. The next night the child was attacked by coma and convulsions, and died.

In this case, the aggravation of urinary troubles after each one of the three last injections was very marked, although the quantity of serum used was very small, and MM. Guinon and Rouffilange conclude that "whenever the permeability of the kidney is compromised by an intense nephritis due to diphtheritic or streptococcus poisoning, it is dangerous to further tax the renal filter by obliging it to eliminate the toxines of the antidiphtheritic serum."

In another case, reported in the May number of the same journal, the injection of serum caused anuria and collapse; the child was, however, saved. After the fourth injection of 10 c. c. an urticaria appeared, first local and around the site of the injections, then diffuse. On the sixteenth day, eight days after the last injection, there was a new attack of urticaria with vomiting, articular and muscular pains, multiple glandular swellings and oliguria. Two days later there was anuria with collapse, fortunately, however, yielding to an energetic treatment.

The writer in the review thus comments on this case: "The alarming symptoms came on at a time when the kidney is seldom gravely attacked by the diphtheritic poison. They began by an urticaria resembling the rash with which we are so familiar in connection with sero-therapic poisoning. . . . Neither during nor after the urinary troubles which came so near being fatal was there any paralysis, a complication so characteristic of diphtheria-poisoning."

Still more recently, at a meeting of the Société Médicale des Hôpitaux, July 5, 1895, M. Moizard reported a case of angina (not diphtheritic) treated by antitoxin and followed by death. Though the case was mild, yet it was regarded as genuine diphtheria till complete absence of the Löffler bacillus was demonstrated by a careful examination. Pending the result of this examination, a preventive injection of 10 cubic centimetres of serum from the Institut Pasteur was made. The false membranes separated kindly, and the general condition seemed satisfactory for a number of days, when, on the sixth day after the injection, high fever set in with a scarlatiniform eruption starting from the point where the injection was made and spreading over the body. No albumin was detected in the urine. The patient subsequently died in convulsions. Moizard ascribes the death to the toxic action of the serum on the central nervous system. He draws the important conclusion that in doubtful cases it is not best to make preventive injections of antitoxin till the presence of the specific bacillus has been determined.

At the same meeting, M. LeGendre expressed the same opinion, and declared that the antitoxin injections should only be practised against confirmed diphtheria. He would also forbid any topical applications to be made to the throat till the proper bacteriological examinations have been made, as these applications momentarily destroy the Löffler bacillus and thus interfere with the diagnosis.

M. Bucquoi said that he could not altogether approve of this course in doubtful cases, for it might sanction a dangerous procrastination; but he would still make it a rule whenever in presence of an angina with suspicious characters to practise without delay a preventive injection of serum.

M. Gaucher, whose heroic methods of treatment in this disease are well known, and who claims extraordinary success therefrom, condemned both a servile reliance on bacteriological methods of diagnosis, and on serotherapy as a mode of treatment.

CEREBRO-SPINAL MENINGITIS IN AN INFANT.

A case of meningitis at the unusually early age of six days is reported by Dr. T. M. Rotch, in the August number of the *Archives of Pediatrics*. The infant was healthy at birth and remained in perfect health for six days, when she began to have convulsions. The temperature rapidly rose, reaching 104.2° F. The temperature subsided somewhat, but the convulsions were frequently repeated until they reached fifty in number. Death occurred on the eighth day of life.

The onset of the attack followed a period of extreme nervous excitement of the mother, who was nursing the infant. When first seen by the author in consultation with Dr. W. L. Richardson, it seemed possible that the convulsions were of a reflex form, such as might follow from disturbance in the breast-milk. The absence of retraction of the head, opisthotonos, any abnormal symptoms connected with the eyes, and the perfect tranquillity and apparently healthy condition of the infant in the intervals of the convulsions, made the supposition of the convulsions being reflex still more probable.

The post-mortem examination was made by Dr. W. F. Whitney, eighteen hours after death. The calvaria presented nothing abnormal. The inner surface of the dura mater was covered with opaque, yellowish patches, the lymph being especially marked over the base of the skull. The vessels of the pia mater were filled with an opaque, greenish-yellow, purulent exudation. This extended over the entire brain and into the spinal canal. Microscopic examination showed the presence of large micrococci, usually associated in pairs, two of which were sometimes united with a chain of four (pneumococcus). Other organs of the body were normal. The condition was, therefore, acute cerebro-spinal meningitis with general venous conjestion. The author reports the case to warn us that a most guarded prognosis should be given in all cases of infantile convulsions.

MEDICAL NOTES.

Diphtheria in Paris. — The *Lyon Médicale* is authority for the statement that during the week ending June 29th there was only one death from diphtheria in Paris. This is the smallest mortality since the mortality statistics of Paris have been published. Is antitoxin to be credited with this remarkable result?

The Italian Congress of Internal Medicine. — The annual Italian Congress of Internal Medicine will be held at Rome in the month of October. Serotherapy will be the principal subject for discussion. Professors Foa, of Turin, de Renzi, of Naples, and Giovanni, of Padua, are announced to take part in the discussion.

Craniectomy Superseded. — Dr. Walter Scargill, of Colchester, England, has made the discovery that travelling not only develops the youth but actually increases the size of the head in the middle-aged, not on paper, but actually. He claims to have verified an increase in circumference of two to three centimetres, even at the age of thirty, forty-five and sixty years. Applying this principle to the treatment of microcephalus, he thinks that the idiots suffering from this disease should be moved every year from one asylum to another, a method of treatment which *La Médecine Moderne* remarks is certainly simpler than Lannelongue's method of craniectomy.

A Natural Feet Society. — Some English ladies, residents in China, have started a society to put a stop to the practice of binding the feet of young girls. Chinamen, who resent the impertinence, ask the members of the new society to join them in the formation of a Natural Waist Society, to put an end to tight-lacing. — *Medical Record.*

Mr. Heath Re-elected. — Mr. Christopher Heath has been re-elected President of the Royal College of Surgeons, England. Mr. Reginald Harrison and Mr. Pickering Pick have also been appointed Vice-Presidents.

Russian Subscription in Honor of Lavoisier. — It has been intimated to the French Académie de Médecine that the emperor of Russia has directed the inauguration of a public subscription for a monument to Lavoisier, the great scientific chemist. In Russia no subscription is permitted for the purpose of honoring any foreigner until the approval of the emperor has been obtained.

The Effect of Ovariotomy upon the Voice. — The well-known effect of castration in young males in heightening the pitch of the voice has lead Dr. J. Moure[1] to investigate the effect of ovariotomy upon the voice. His observations in two cases of ovariotomy in young women showed an effect exactly the opposite of that of castration in men, since the voice became deeper and harsher, and the patients thought they were hoarse. The higher notes were lost and the voice fell from soprano to mezzo-soprano. This small number of observations is obviously entirely insufficient to establish a fact; and as no previous cases are on record of the production of any changes in the voice by ovariotomy, the observations must await confirmation from further cases.

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[1] Annales des Maladies de l'Oreille, du Larynx, etc., No. 4, 1895.

The Czarewich has Consumption.— It is announced that Dr. Leyden, of Berlin, and Professor Nothnagel, of Vienna, have been called to see what can be done for the Czarewich, who is said to be suffering from phthisis in an advanced stage.

A Conference on Bovine Tuberculosis. — An important convention was held in the United States Hotel in Boston, on July 25th, of representatives of boards of agriculture and cattle commissions, to consult in regard to interstate questions in the handling of bovine tuberculosis. Representatives of the boards of health or agriculture of Massachusetts, Maine, Vermont, New Hampshire, Connecticut and New Jersey were present. The question of the practicability of interstate quarantine statutes and regulations for the control of interstate traffic in cattle was discussed at length.

A New Method of Attracting Patronage.— One of the companies that run lines of steamers on the great lakes has announced that it will give a prize of $250 in gold for every baby born on one of its vessels this season; $500 for twins and $1,000 for triplets. This is encouraging, the prize for triplets being notably appreciative. They are worth the price, and the money will start the parents off very handsomely under what would otherwise be unfavorable conditions.— *Boston Herald.*

A small reward for adding sea-sickness to the pains of child-birth!

NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, July 31, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 54, scarlet fever 23, measles 30, typhoid fever 27.

NEW YORK.

Dr. Lewis appointed President of the Board of Health.— Dr. Daniel Lewis has been appointed President of the State Board of Health. Dr. Lewis was born in Alleghany County, New York, in 1846, and graduated from the College of Physicians and Surgeons, in 1871. For many years he has been prominent in the profession of New York City, and not long since was president of the State Medical Society. He is a trustee of the New York Academy of Medicine and professor of cancerous diseases in the Post-Graduate Medical School.

Dr. Tracy succeeds Dr. Nagle.— Dr. John T. Nagle has resigned his position as Registrar of the Bureau of Vital Statistics, and been succeeded by Dr. Roger S. Tracy, who occupied the post from 1887 to 1892. Dr. Tracy has been connected with the Board of Health since 1870, and is well known as a statistician. Dr. Nagle retired on account of ill health. He was appointed inspector of the Board of Health in 1868, and has served with the Department ever since. He is the first officer of the Health Department to be retired under the pension law passed by the recent legislature, the enactment of which he was instrumental in securing. It allows a maximum of $1,200 a year, but for the present Dr. Nagle will receive but $600. The amount will probably be increased when the fund permits.

Fracture of the Cervical Vertebræ.— A patient recently died in Roosevelt Hospital who survived a fracture of the cervical vertebræ for ten months. At first the case was regarded as quite hopeless, but in a short time the patient, a male, forty-five years of age, began to improve, and until a week before his death it was thought that he might possibly recover ultimately.

Death of a Centenarian.— Mrs. Cynthia Falconer Smith, the oldest resident of Westchester County, died at her residence at Elmsford, near White Plains, on July 22d, in her one hundred and third year. Mrs. Smith was born at Tarrytown, near the place of her death, on September 3, 1793, and came of a distinguished Huguenot and Revolutionary family. She was a lineal descendent of the famous Admiral de Coligny, and her great-grandfather, General John Falconer, at whose house in White Plains were the headquarters of the Duc de Lauzerne during the American Revolution, was an aid-de-camp of General Washington. Her elder son died in December last, at the age of eighty-two, and the younger survives her, aged sixty.

Danger of answering Telephone Calls.— The possible danger of answering calls from strangers by telephone is illustrated by the case of Dr. George Drury, a well-known physician of Brooklyn, who on July 27th was thus decoyed to an empty house and after being nearly choked to death was robbed of all his valuables. He was then left bound and gagged, and he remained unconscious for a considerable time.

Suicide of Dr. Hagan.— Dr. Thomas M. Hagan, a bright, young physician of the medical staff of the City Insane Asylum on Hart's Island, committed suicide by stabbing himself on July 24th. For some time he had been in poor health, and he was a most assiduous student. He was twenty-seven years of age, a graduate of the Louisville Medical College and had been at the asylum less than a year. His parents reside near Louisville, Ky.

◆

Miscellany.

THE BICYCLE AND MEDICAL PRACTICE.

The use of the bicycle has expanded and developed from a salutary athletic exercise into a great social obsession. It has seized upon every class of society, both sexes, all ages, and every condition of life. It is taken up by the well because it makes them feel better, by the invalid because it makes them feel well, by tired people because it rests them, and by the rested because it makes them feel tired. The fat ride to get thin and the thin to get fat. It has displaced the horse, and in women has, in a measure, replaced the uterus. It has made the simple and ancient custom of walking most unpopular, it has cut down the function of the steam-car, and competes successfully with the suburban trolley. The doctors have taken it up and expressed their approval of it, and we are far from saying a word in opposition. The bicycle has come to stay, though not with quite the omnipresent activity which it now enjoys. Already we notice grave and reverend seigniors in our profession riding along the cobble-stones in their golf suits instead of lying comfortably back in their victorias. Time that used to be spent in serious scientific pursuits at the hospital, in the laboratory, and at the desk is now shortened in order to enjoy a ride up the Boulevard. The bicycle has cut down the scientific activity of the New York profession at least fifty per cent. already.—*The Post-Graduate.*

◆

THE ETIOLOGY OF GOITRE.

Dr. H. C. L. Morris, writing in the *British Medical Journal*, speaks of his experience with goitre in Hambledon, a small town of two thousand inhabitants in Buckinghamshire, England. In the space of two and a half years, fifty-five well-studied cases came under his observation. The soil of the district from which the patients came was extremely chalky, the chief source of water-supply being from wells sunk into the chalk. All of the cases were water drinkers, only four of the number males. The ages ranged from four to seventy-six.

The conclusion to which Dr. Morris's study leads, is that the presence of calcium and magnesium carbonates in the water was the sole cause of the disease in his cases. In making this statement he does not exclude the possibility of other causes in other regions. The writer is confident that heredity had nothing to do with the etiology of his cases. In but one case was there the slightest suspicion of it as a causative factor. Nor was he able to determine that intermarriage played any part in the propagation of the disease.

Altogether the communication is a valuable one, and throws new light upon a still more or less open question.

◆

A REPORT ON ONE HUNDRED AND THREE OPERATIONS ON THE STOMACH.

Miculicz reported at the Twenty-fourth Congress of German Surgeons the results of 103 operations on the stomach and pylorus, the operations included in the report being gastrostomies, gastroenterostomies, resections of the pylorus and pyloroplastic operations. Of these cases 35 were operated on by the writer at Krakau and Königsberg, 68 in Breslau. The mortality of the former series of 35 cases was 37 per cent., of the latter series of 68 cases 15 per cent., a comparison which certainly shows the value of experience and practice in these cases.

In 25 operations for non-malignant stricture of the pylorus, there were only two deaths. Of 73 patients operated upon for carcinoma, 16 died. The causes of death were collapse, pneumonia, inanition and in only two cases wound infection. The operation for carcinoma prolongs life on an average about half a year, and at any rate gives great relief from the symptoms.

Miculicz relies for improvement in his results in the future mainly upon progress in the methods of diagnosis, since he considers that the technique has already been perfected as far as is possible with our present knowledge. For purposes of exploration he recommends an incision of only two to four centimetres in length, which he considers will be found fully sufficient for purposes of diagnosis, and possesses considerable advantage over long incisions with respect to after-treatment.

◆

THE EFFECT OF VIVISECTION UPON THE GREATEST OF VIVISECTORS.

The *Lancet*, in a recent editorial, says that since the publication by Moleshott of his beautiful monograph on Donders, no worthier tribute has been paid by one of our profession to a professional brother than Dr. Mosso, of Turin, has paid to Ludwig the great physiologist and teacher. Certain extracts from this editorial will bear perusal by anti-vivisectionists, both lay and medical, in view of their well-known contention that vivisection brutalizes the mind of him who practises it.

"On passing from Ludwig the experimental philosopher, to Ludwig the man and the citizen," says the editor, "Professor Mosso has much to tell the world of the deepest interest. 'Ludwig,' he says, 'the greatest of vivisectors, was president of the Leipzig Society for the Protection of Animals, and remained to the last one of its most active members.' Germany owes it to him that her horses and beasts of burden are now humanely treated. To him is due that awakening of the true humanitarian spirit toward the brute creation that culminated in the 'Verband der Thierschutz-Vereine des Deutschen Reichs' (Union of German Societies for the Protection of Animals). It was mainly from her sense of the gentler attitude to be encouraged toward animals on the part of the rising generation, that Leipzig made him an honorary citizen on the fiftieth anniversary of his graduation in medicine. 'No physiologist,' continues Professor Mosso, 'has ever sought with greater frankness than he to impose just limits on vivisection. The gates of his institute were ever open to all who wished to assure themselves that he, in the midst of his experiments, knew how to spare suffering. The vivisector's art attained such perfection in his hands that, having to sacrifice an animal, he did not let it feel that it was even being tied. He would apply the muzzle and instantly proceed to the exhibition of ether or chloroform, which in a few seconds, in a dog, for example, made it insensible. It is an error,' adds Professor Mosso, wisely, 'it is an error to believe that experiments can be performed on an animal which feels. The perturbation induced by pain in the functions of the organism is so profound as to render useless the experimenter's study. It was Ludwig who uttered the celebrated *mot* that some physiologists, to study the nervous system, act like him who fires a pistol into a watch to see how the chronometer works. Suffering ought to be entirely eliminated from physiologic experiment, because the instruments we employ to-day are so delicate that they become unserviceable the moment the animal is agitated or moves.' . . .

"Illustrative anecdotes without number might be multiplied to prove the real humanity of Ludwig — of the man who was denounced on anti-vivisection platforms as the 'arch-fiend' of the 'Nine Circles,' and as the keeper of the worst 'torture den' in Europe. Well may the physiologist and the physician cry aloud, 'Humanity! what offences are perpetrated in thy name!' Professor Mosso's masterly 'full-length' of a biologist, a teacher, and a philanthropic citizen, surpassed by none of his generation, ought to send a thrill of shame through the promoters of a mischievous propaganda which, mistaking sentimentality for sentiment, and morbid hyperesthesia for sound feeling, would have tied the hands of one of the most beneficent students of nature who ever devoted his life to the healing art."

◆

PALLIATIVE TREPHINING IN CEREBRAL TUMOR.

Albert[1] has practised palliative trephining in three cases of cerebral tumor occurring in Nothnagel's clinic, applying to cerebral surgery the principle upon which the operations of gastrostomy in neoplasms of the esophagus and enterostomy in malignant disease of the rectum are based. Paracentesis of the ventricle was not employed, the procedure consisting simply of making extensive openings in the skull, in the first cases without opening the dura.

The first case was that of a young man of eighteen who for years had suffered from dizziness, vomiting whenever the head was lowered, and later from salivation, constipation, disturbances of vision and headache. The trephine was applied over the right parietal bone, a piece the size of a dollar being removed. The tense dura bulged into the defect, and pulsation was plainly felt. The headaches were relieved by the operation: the vomiting, however, continued. The tension of the dura gradually decreased. After four weeks the operation was repeated on the left side. The headaches disappeared permanently, the vomiting (twice a day) remained, and the salivation was not affected.

The second case was that of a woman of twenty-seven, who soon after her confinement, six months before, began to have severe pain in the right side of the back of the head, which lasted all day. Later, pain in the extremities, and disturbances of vision came on, with blindness of the right eye, paresis of the left arm and leg, deafness of the right ear, finally anemia and right facial paresis. Trephining over the right parietal bone. Dura very tense, pulsating sluggishly; puncture with a small trocar gave exit to a small amount of fluid. Temporary improvement of the headache, followed by recurrence.

The third case was that of a man of thirty-nine, who for two years had suffered from very severe headaches, nausea and vomiting, especially in the morning, in the evening dizziness and ringing in the ears. Temporary improvement followed mercurial inunctions and an intercurrent attack of typhoid. Eight months ago disturbances of vision had appeared. Improvement after a course of treatment at Aix. Slight left facial paresis. Removal of a bone flap from the left parietal. Dura not tense, non-pulsating. Improvement of the headache and amblyopia; no vomiting; improvement in gait. Later, improvement in vision. After four weeks, recurrence of vomiting and dizziness. Opening the dura gave exit to no fluid, but there was prolapse of cerebral substance attended by symptoms of irritation on the part of the left arm. Later, trephining was done on the left side, with slight improvement. The cerebral hernia sloughed; and three months after the first operation fever and headache ensued, with temporary improvement followed by recurrence. Two months later, that is, five months after the first operation, death occurred with symptoms of encephalomalacia. The post-mortem revealed an endothelioma of the tentorium and the left central hemisphere.

Albert reserves judgment as to the advantages of the operation.

◆

THERAPEUTIC NOTES.

The Treatment of Erysipelas with Absolute Alcohol.[1]— Langsdorff, of Baden Baden, has treated 32 cases of erysipelas of the face and other parts of the body with compresses saturated in absolute alcohol, and reports that he has secured excellent results. The painful tension of the skin disappeared in from one to two hours, and in the course of a day the temperature fell to normal. After eight to ten hours, marked swelling of the skin took place, especially about the centre of the inflamed area. New areas of the disease often appeared near the border of the original patch, which readily yielded, however, to renewed applications of alcohol. Desquamation followed after some days, at which time applications of lanolin were valuable. Complications, such as connective-tissue necrosis from the alcohol applications, were not observed by Langsdorff. To prevent evaporation the compresses must be covered with some impermeable material; and they should be changed every fifteen minutes, until all inflammation has subsided, two to three days being generally required.

Mercuric Chlorid in the Treatment of Rhus Poisoning.— Witmer, in the *Philadelphia Polyclinic* calls attention to the value of corrosive sublimate in the treatment of dermatitis venenata. The case is cited of a patient who was very susceptible to the poison, and had yearly attacks of a severe type, frequently lasting for six weeks. He applied for treatment in the early part of May with the typical eruption on the face and fingers, and was given one-thirty-second of a grain of mercuric chlorid every three hours. Within four days the eruption had entirely disappeared. The topical applications consisted of lead-water and laudanum during the acute stage; of hot water, frequently applied, during the stage of exudation, and of a two-per-cent. carbolated petrolatum ointment during the stage of desquamation. This case was of interest owing to the rapid convalescence of the patient during a time when the toxic plant (rhus) was particularly virulent.

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[1] Wiener med. Woch., 1895, No. 1.

[1] Wiener klin. Woch.

METEOROLOGICAL RECORD.

For the week ending July 20th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..14	30.01	64	71	56	71	89	80	N.	N.	11	14	C.	O.	.39
M..15	30.06	64	69	58	74	76	75	N.E.	S.W.	2	10	F.	F.	
T ..16	30.00	64	69	59	93	97	95	E.	N.E.	6	12	O.	R.	.03
W..17	29.95	63	66	60	92	95	95	N.	S.E.	5	4	O.	C.	
T ..18	29.94	72	82	63	67	50	58	N.W.	N.	10	7	O.	C.	
F..19	30.10	71	82	60	60	67	64	N.W.	W.	6	5	C.	F.	
S...20	30.05	74	80	67	74	80	77	S.W.	E.	2	5	O.	F.	
☞	30.01		74	60			78							.42

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 20, 1895

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	1,956,000	1012	595	35.30	8.90	26.50	3.30	.30
Chicago . . .	1,600,000	—	—	—	—	—	—	—
Philadelphia .	1,139,457	478	264	27.72	7.35	19.32	3.99	—
Brooklyn . .	1,013,000	545	316	35.82	8.46	29.70	2.70	.54
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	228	93	20.24	10.56	12.76	3.96	1.76
Baltimore . .	500,000	—	—	—	—	—	—	—
Cincinnati . .	325,000	146	66	23.46	8.97	18.63	—	—
Cleveland . .	325,000	157	—	32.00	5.12	30.08	.64	—
Washington .	285,000	—	—	—	—	—	—	—
Pittsburg . .	272,000	120	73	33.20	4.15	28.73	2.50	1.66
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	35	9	20.95	17.10	14.25	—	—
Charleston . .	65,165	36	18	24.93	11.08	16.66	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	31	21	45.22	6.46	38.76	—	—
Fall River . .	92,233	53	36	44.50	3.76	26.32	—	—
Lowell . . .	90,613	49	32	51.00	—	44.88	2.04	—
Cambridge . .	79,607	—	—	—	—	—	—	—
Lynn	65,123	15	2	—	13.33	—	—	—
Springfield . .	50,284	25	16	64.00	12.00	60.00	—	4.00
Lawrence . .	49,900	29	22	51.75	10.35	51.75	—	—
New Bedford .	47,741	24	20	58.24	4.16	50.00	—	4.16
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	4	2	—	—	—	—	—
Salem	33,155	8	4	37.50	—	37.50	—	—
Haverhill . .	32,925	8	3	—	25.00	—	—	—
Malden . . .	30,209	7	3	14.28	—	—	—	14.28
Chelsea . . .	29,806	11	3	—	9.09	—	—	—
Fitchburg . .	29,383	7	4	28.56	—	28.56	—	—
Newton . . .	28,837	11	5	27.27	27.27	18.18	9.09	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,954	7	2	—	—	—	—	—
Waltham . .	22,058	9	2	—	33.33	—	—	—
Quincy . . .	19,642	5	4	—	—	—	—	—
Pittsfield . .	18,802	6	2	33.33	33.33	—	33.33	—
Everett . . .	16,585	3	1	—	—	—	—	—
Northampton .	16,331	—	—	—	—	—	—	—
Newburyport .	14,073	8	3	12.50	12.50	12.50	—	—
Amesbury . .	10,920	4	0	—	50.00	—	—	—

Deaths reported 3,069; under five years of age 1,629; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,017, consumption 263, acute lung diseases 163, diarrheal diseases 794, diphtheria and croup 86, typhoid fever 37, whooping-cough 29, measles 28, scarlet fever 16, cerebro-spinal meningitis 10, malarial fever 9, erysipelas 8.

From typhoid fever New York 10, Philadelphia 8, Brooklyn 6, Boston, Pittsburgh, Nashville and Charleston 2 each, Cincinnati, Cleveland, Providence, Fall River and Lowell 1 each. From whooping-cough New York 17, Philadelphia 4, Brooklyn 3, Cincinnati and Pittsburgh 2 each, Lowell 1. From measles New York 17, Philadelphia 5, Brooklyn 4, Cleveland and New Bedford, 1 each. From cerebro-spinal meningitis New York and Boston 4 each, Worcester 2. From malarial fever Philadelphia and Brooklyn 3 each, Charleston 1. From erysipelas New York 4, Boston 2, Philadelphia and Providence 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending July 13th, the death-rate was 19.9. Deaths reported 4,033; acute diseases of the respiratory organs (London) 187, diarrhea 564, measles 126, diphtheria 72, whooping-cough 54, scarlet fever 37, fever 23, small-pox (London) 1.

The death-rates ranged from 8.9 in Huddersfield to 27.4 in Wolverhampton; Birmingham 18.1, Bradford 18.4, Cardiff 12.4, Gateshead 15.2, Leeds 21.0, Leicester 22.1, Liverpool 30.2, London 21.0, Manchester 20.7, Newcastle-on-Tyne 15.6, Nottingham 16.6, Portsmouth 13.7, Sheffield 17.0, Sunderland 18.6, Swansea 10.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 20, 1895, TO JULY 26, 1895.

The extension of leave of absence on account of sickness, granted **First-Lieut. Alexander S. Porter**, assistant surgeon, U. S. A., is further extended two months, on account of sickness.

Leave of absence for one month, with permission to apply for an extension of ten days, to take effect on or about July 20, 1895, is granted **Colonel Dallas Bache**, assistant surgeon-general, medical director, Department of the Platte.

APPOINTMENTS.

Dr. J. H. Wright has been appointed second assistant to the pathologist at the Boston City Hospital.

Dr. E. W. Taylor has been appointed visiting neurologist to the Long Island Almshouse and Hospital.

Dr. Alexander Quackenboss has been appointed visiting ophthalmic surgeon, and **Dr. E. A. Crockett**, visiting aural surgeon at the City of Boston Almshouse and Hospital on Long Island.

BOOKS AND PAMPHLETS RECEIVED.

Albany Medical College Catalogue, 1894–95, and Announcement, 1895–96.

Thirteenth Annual Announcement of the Medical Department of Niagara University, 1895–96.

The Flechsig Method in the Treatment of Insane Epileptics. By L. Pierce Clark, M.D. Reprint. 1895.

Faculty. Session 1895–96. When to Pluck a Medical Student. Free Medical Education in Denver. Reprints. 1895.

Twelfth Annual Report of the Superintendent of Health of the City of Providence, for the year ending December 31, 1894.

Woman's Medical College of the New York Infirmary, Thirtieth Year, Annual Catalogue and Announcement, June, 1895.

The Use of Vaccine Serum in the Treatment of Variola. By Llewellyn Eliot, A.M., M.D., of Washington, D. C. Reprint. 1895.

Transactions of the Medical Association of Central New York, Twenty-seventh Annual Meeting, Buffalo, N. Y., October 16, 1894.

Civil Service Reform in State Institutions; Reorganization of the Medical Staff. By Boerne Bettman, M.D., Chicago, Ill. Reprint. 1895.

The Annual Report of the Superintendent and Physician of Walnut Lodge Hospital, Hartford, Conn., at the annual meeting, January 1, 1895.

Fortieth Annual Report upon the Births, Marriages and Deaths in the City of Providence for the year 1894. By Charles V. Chapin, M.D., City Registrar.

The Murphy Button; With a Report of an Unsuccessful Cholecystoduodenostomy. By Aug. Schachner, M.D., Ph.G., Louisville, Ky. Reprint. 1895.

An Address Delivered at the Opening of the Twenty-fifth Annual Meeting of the Medical Society of the State of California, held in San Francisco, April, 1895. By G. L. Simmons, M.D., President, Sacramento, Cal.

In the Circuit Court of the United States at Chattanooga, Tennessee, April Term, 1895. W. R. Amick, Plaintiff, *vs* James E. Reeves, Defendant. Action for Libel. Pleadings in the Cause; Arguments of Counsel; Charge of the Court. Reported by Miss Julia Akers, Stenographer.

The Annual Report of the Department for the Insane of the Pennsylvania Hospital for the year ending fourth month, 25th, 1895. Presented to the One Hundred and Forty-fourth Annual Meeting of the Managers of the Pennsylvania Hospital, by John B. Chapin, M.D., Physician-in-Chief and Superintendent.

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Dr. Oliver Wendell Holmes.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum 2
Albany Medical College 1
Anheuser-Busch Brewing Association........ 3
Antikamnia Chemical Company...Antikamnia 3
Armour & Co............The Armour Laboratory 14
Assistant Wanted.................... 2
Baker, L. W., M.D.... ....Riverview 1
Baker, Dr. W. H..............................Card 1
Bartlett, Dr. B. W............................Card 1
Battle & Co. ....Bromidia 2
Bellevue Hosp. Med. Col..... Sessions of '94-95 1
B. H. R. Distilling Co.................... 6
Bowdoin College...........Medical Department 1
Boylston Medical Prize Questions............
Breitenbach Co., M. J...........Pepto-Mangan 4
Channing, Dr. Walter.................... 1
Chauncy Hall School.................... 31
Cocke, Dr. James R.................... 1
Codman & Shurtleff......Surgical Instruments 1
Coll. of Physicians and Surgeons, Boston... 1
Coll. Physicians and Surgeons, Baltimore, 16
Columbian University.................... 16
Crittenton, C. N.... ....Vinolia Soap 10
Cutter, Dr. W. P.................... 1
Dadirrian, Dr..............................Matzoon 2
Dartmouth College, N. H....Med. Department 1
Doliber-Goodale Co.................Mellin's Food
Dow Portable Electric Assistant, The..... 2
Drevet Co.................................Hydrozone 1
Edes, Dr. Robert T...........................Card 1
Evans & Sons................. ...Sandal Capsules
Fairchild Bros. & Foster.........Milk Mixture 7
Feeble-minded Youth, Inst. for..Barre, Mass. 1
Fehr, Dr. J........................Baby Powder, etc. 1
Fellows, James I. ....Hypophos-phites 2
Fisk & Arnold.......................Artificial Limbs 1
Flood, Dr. Everett.................... 1
Fougera, E. & Co...............Imp'g Pharmacists 9, 2
Gear, J. Frank..............Surgical Instruments
Goldthwaite, Dr. S. V.................... 1
Goode, T. F....................Buffalo Lithia Water 1
Gould's Medical Dictionary.................... 2
Graham, Dr. Douglas......Treatise on Massage 2
Greene, Dr. E. M.........Examinations of Sputa 1
Harvard University........Dental Department 1
Harvard University.......Medical Department 3
Improved Movement Cure Institute......... 1
Jefferson Medical College.................... 1
Kingsbury, Dr. A. D..............................Card 1
Leedom, Charles..................Nuclein Solution 1
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Lloyd, Andrew J. & Co. .....Manufg. Opticians
Long Island College Hospital.................... 1
Mackee, Dr. L. V. G. .... Sanitarium 1
Maltine Mfg. Co. .... Maltine
Mariani & Co..............................Vin Mariani 1
Marks, A. A............................Artificial Limbs 2
Martin, Dr. F. C......................Vaccine Virus 1
McElroy, P. J..........................Glass Syringes 1
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Norton, Dr. Eben C........ ....Mental Diseases 1
N. Y. Polyclinic and Hospital.................... 1
N. Y. Post-Graduate School and Hospital.. 1
Oakland Chemical Co........Hydrogen Dioxide
Patch, E. L. Co.............. .....Lithia Tabl ts 2
Peake & Buzzell ....Surgeons' Supplies 2
Pinaud, Ed................................Sels Romains 2
Purdue Frederick Co., The....................
Reed & Carnrick......................Pretonuclein 1
Ring, Dr. Allan Mott.........Nervous Diseases 1
Russell, Dr. F. W..............................Card 1
Schieffelin & Co...................Mfg. Chemists 1
Schulze-Berge & Koechl......Migranin, etc. 11, 3
Seeley, I. B. & Co..........Hard Rubber Trusses 2
Sharp & Dohme.....................Mfg. Chemists 2
Stedman, Dr. Henry R..........................Card 1
Tanner, E. S..............................Publisher 3
Thayer, Henry & Co.................... 2
Theodore Metcalf Co..............................Coca
Twitchell, Dr. George B.......................Card 1
Tyree, J. S. ....Antiseptic Powder 2
University of Maryland.................... 1
University of the City of New York....... 1
Walnut Lodge Hospital.................... 1
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Weeks & Potter Co. ....Quinona 3
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White, Dr. Walter H..........................Card 1
Willard, Dr. A. J..............................Card 1
Woman's Hospital, Lowell.................... 1
Woman's Medical College, Baltimore...... 1
Woman's Med. Coll..of the New York Infirmary 1
Woodward, L. F. ....Stammering 1
Yale University........,Medical Department 1

HARVARD UNIVERSITY,

MEDICAL DEPARTMENT.

BOSTON, MASS.

Summer Courses of Instruction, 1895.

Subject.	Instructor.	Place.	No. of Exercises	Begins.	Ends.	Days.	Hour.
Anatomy of the Brain	Dr. Dexter	Medical School	12	July 1	July 26	Mo. We. Fr.	10
Anatomy of the Ear[1]	Dr. Bryant	Medical School	13	Aug. 2	Aug. 30	Mo. We. Fr.	2
Histology and Microscopy[2]	Dr. Ames	Medical School	18	July 15	Aug. 16	Mo. We. Fr.	3
Clinical Microscopy[1]	Dr. Whitney	Mass. General Hospital	17	June 1	June 29	Tu. We. Fr. Sat.	11.30
Clinical Microscopy	Dr. Whitney	Mass. General Hospital	18	July 1	July 31	Tu. We. Fr. Sat.	11.30
Clinical Microscopy	Dr. Whitney	Mass. General Hospital	16	Sept. 3	Sept. 28	Tu We. Fr. Sat.	11.30
Chemistry[3,4]	Dr. Hills	Medical School	30	June 24	July 27	Daily	10
Medical Chemistry[4,5]	Dr. Ogden	Medical School	30	July 1	Aug. 3	Daily	1
Pathological Anatomy[6]	Dr. Taylor	Medical School	14	July 1	July 31	Mo. We. Fr.	3
Pathology of Infectious Diseases[1]	Dr. Wright	Medical School	27	June 20	July 20	Daily	2
Clinical Medicine	Dr. Gannett	Mass. General Hospital	21	July 1	Aug. 16	Mo. We. Fr.	9
Clinical Medicine	Dr. Gannett	Mass. General Hospital	19	Aug. 19	Sept. 30	Mo. We. Fr.	9
Clinical Medicine	Dr. Withington	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10.30
Clinical Medicine[1,7]	Dr. Vickery	Mass. General Hospital	12	June 3	June 28	Mo. We. Fr.	10
Clinical Medicine	Dr. Bowditch	City Hospital	16	June 4	July 26	Tu. Fr.	10
Orthopedic Surgery	Dr. Bradford	Children's Hospital	18	July 1	Aug. 28	Mo. We.	4
Clinical and Operative Surgery	Dr. Mixter	Mass. General Hospital	25	June 4	July 30	Tu. Th. Sat.	11
Clinical and Operative Surgery	Dr. Mixter	Mass. General Hospital	25	Aug. 1	Sept. 26	Tu. Th. Sat.	11
Clinical and Operative Surgery[1]	Dr. Monks	City Hospital	13	Aug. 2	Aug. 30	Mo. We. Fr.	10
Clinical and Operative Surgery[1]	Dr. Monks	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10
Genito-Urinary Surgery	Dr. Watson	City Hospital	13	June 1	June 29	Tu. Th Sat.	11
Clinical and Operative Surgery[1]	Dr. Conant	Carney Hospital	20	July 3	Aug. 16	Mo. We. Fr.	10
Clinical and Operative Surgery[1]	Dr. Conant	Carney Hospital	19	Aug. 19	Sept. 30	Mo. We. Fr.	10
Clinical and Abdominal Surgery[1]	Dr. Conant	Charity Hospital	13	June 6	July 30	Tu. Th.	10
Clinical and Abdominal Surgery[1]	Dr. Conant	Charity Hospital	17	Aug. 1	Sept. 26	Tu. Th.	10
Intubation of the Larynx[1,8,14]	Dr. Scudder	Medical School	3	July	Aug.		
Surg. Apparatus and Bandaging[1,9,14]	Dr. Scudder	Medical School	10	July 8	July 18	Daily	
Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	13	July 2	July 30	Tu. Th. Sat.	10
Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	13	Aug. 2	Aug. 30	Mo We. Fr.	10
Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10
Minor Surgery	Dr. Brooks	Mass. General Hospital	14	July 1	July 31	Mo. We. Fr.	10
Minor Surgery	Dr. Brooks	Mass. General Hospital	14	Aug. 1	Aug. 31	Mo. Th. Sat.	10
Minor Surgery	Dr. Brooks	Mass. General Hospital	13	Sept. 2	Sept. 30	Mon. We. Fr.	10
Clinical Obstetrics	Dr. Green	Lying-in Hospital	45	June 1	July 31		
Clinical Obstetrics	Dr. Green	Lying-in Hospital	45	Aug. 1	Sept. 30		
Clinical Obstetrics[1]	Dr. Townsend	Lying-in Hospital	8	Sept. 2	Sept. 27	Mo. Fr.	12
Clinical Obstetrics[1]	Dr. Haven	Lying-in Hospital	9	July 1	July 29	Mo. Fr.	11
Operative Obstetrics	Dr. Haven	Medical School	11	July 8	July 19	Daily	4
Diseases of Children[10]	Dr. Buckingham	Children's Hospital	18	June 1	July 30	Mo. Th. Sat.	10
Diseases of Children[11]	Dr. Wentworth	Children's Hospital	18	Aug. 1	Sept. 28	Daily	10
Diseases of the Ear	Dr. Blake	Eye and Ear Infirmary	12	Sept. 3	Sept. 28	Tu. Th. Sat.	9
Diseases of the Eye[1]	Dr. Standish	Eye and Ear Infirmary	13	July 2	July 30	Tu. Th. Sat.	10
Diseases of the Eye	Dr. Cheney	Eye and Ear Infirmary	22	June 12	July 31	Mo. We. Fr.	9
Diseases of the Larynx	Dr. Farlow	City Hospital	13	June 3	July 12	Mo. We. Fr.	10
Diseases of the Nervous System	Dr. Walton	Mass. General Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10
Diseases of the Skin	Dr. Bowen	Mass. General Hospital	20	July 2	Aug. 15	Tu. Th. Fr.	10
Diseases of the Skin	Dr. Bowen	Mass. General Hospital	20	Aug. 15	Sept. 27	Tu. Th. Fr.	10
Diseases of Women	Dr. Haven	City Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10
Diseases of Women	Dr. Washburn	Women's Free Hospital	12	July 1	Aug. 8	Mo. Th.	3.30
Diseases of Women	Dr. Washburn	Women's Free Hospital	12	Aug. 12	Sept. 19	Mo. Th.	3.30
Diseases of Women[1,13]	Dr. Burrage	St. Elizabeth's Hospital	13	June 3	July 15	Mo. Th.	10
Diseases of Women[1,13]	Dr. Burrage	St. Elizabeth's Hospital	13	July 18	Aug. 29	Mo. Th.	10
Bacteriology[1]	Dr. Ernst	Medical School	36	July 1	Aug. 10	Daily	3
Hygiene	Dr. Harrington	Medical School	36	July 1	Aug. 10	Daily	3
Municipal Sanitation	Dr. Durgin	Medical School	14	July 1	July 31	Mo. We. Fr.	3
Practical Therapeutics[1]	Dr. Tenney	Boston Dispensary	20	July 8	Aug. 21	Mo. We. Fr.	10
Clinical Pathology	Dr. E. W. Dwight	City Hospital	14	Aug. 1	Aug. 31	Tu. Th. Sat.	10
Clinical Pathology	Dr. E. W. Dwight	City Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10
Clinical and Abdominal Surgery	Dr. Elliot	Mass. General Hospital	21	June 3	July 19	Mo. We. Fr.	11
Clinical Surgery	Dr. F. B. Harrington	Mass. General Hospital	18	July 2	Aug. 30	Tu. Fr.	11
Surgery of Children[1]	Dr. Lovett	Children's Hospital	13	Aug. 17	Oct. 1	Tu. Sat.	4
Genito-Urinary Surgery[1]	Dr. Thorndike	City Hospital	13	Aug. 2	Aug. 30	Mo. We. Fr.	10
Genito-Urinary Surgery[1]	Dr. Thorndike	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10
Practical Pharmacy[5]	Dr. C. Harrington and Mr. Jordan	Medical School	12	July 1	July 26	Mo. We. Fr.	4
Practical Pharmacy[5]		Medical School	12	July 29	Aug. 23	Mo. We. Fr.	4
Pathological Histology[14]	Dr. Mallory	Medical School	25	July	Aug.		
Pathological Anatomy[14]	Dr. Mallory	City Hospital	20	July 20	Aug. 20		

Class-membership limited.
[2] A small charge will be made for laboratory supplies.
A satisfactory examination passed at the end of this course will be accepted in place of the admission examination in Chemistry.
A deposit of five dollars will be required to meet charges for supplies and broken apparatus.
Each exercise is of two hours' duration.
[6] Of the nervous system only.
[7] Men and Children o
Practice on cadaver.
[9] Fractures and dislocations especially included.
A course will be of six weeks' duration and the class may be joined at any time before June 20th.
A course comprises eighteen exercises and the class may be joined at any time before August 19th.
Minor Gynecology.
[13] Operative Gynecology.
[14] Time of exercises to be arranged la

For further information and full description of all the courses mentioned, address

DR. WM. L. RICHARDSON, *Dean*, HARVARD MEDICAL SCHOOL, 688 Boylston St., BOSTON, M

Press of S. J. Parkhill & Co., 226 Franklin St., Boston, Mass.

my fingers while tying the second ligature that the artery was not completely closed at this point, led me to give up this step in the operation.

The overlying muscles were sutured in approximately their original positions, and the wound was closed as rapidly as possible. An aseptic dressing was applied. The operation lasted one hour and a half. The pulsation was gone from the neck and from the right carotid and radial arteries. The right arm was wrapped in cotton wadding, and bandaged to maintain its temperature. After the operation the right pupil was more dilated than the left and reacted more slowly to light. There was a relative anemia of the right tympanic membrane. Had very little shock, very little pain.

On the second day the patient was remarkably comfortable. He was given one-eighth of a grain of morphia every four hours to secure rest. Pressure on the finger-nails of the right hand showed a slight return of circulation. The right pupil had become the same in size as the left. The patient had a slight hacking cough.

3d day: Urine normal, with exception of high color.

4th day: The patient was comfortable; some mucus collected in the throat. It was feared that the efforts at expectoration would disturb the healing of the ligated artery. Free catharsis was established by salines.

5th day: The finger-tips of the right hand showed a pink color. The fingers could be moved a little.

6th day: The wound was dressed. Violent pulsation could be seen near the sternum. An extremely small, but yet distinct, radial pulse could be felt. A few sutures were removed. Union had occurred by first intention. The patient was remarkably self-contained and obeyed instructions.

7th day: The prickly sensations and numbness in the arm and hand which were present for the first three days had wholly disappeared.

8th day: The patient has had tincture of digitalis (ten drops every four hours) and atropine (one-hundredth of a grain three times a day) since operation. The digitalis was now administered every six hours. A feeble pulse in the right radial artery could be felt, but it was distinctly later than the pulse in the left radial. Subjective sensations of warmth and heat in the right arm and hand could be felt, also slight prickling sensations.

9th day: Some headache. Complained of general pruritus, which was relieved by alcohol baths. Atropia omitted; digitalis reduced to ten drops three times a day. Attempts were made to secure sphygmographic tracing of the right and left radial pulse, but the pulsation was so feeble on the right side that no record could be obtained.

10th day: Wound was dressed; all the sutures were removed; union by first intention had occurred except for a small granulating area at the angle of the wound over the sternum.

12th day: Patient has been reading papers for several days. Complained of some pain in the region of the wound, which he attributes to the incision.

16th day: The right arm was still in a protective dressing, but could be used considerably.

17th day: Wound of neck firmly closed.

19th day: The patient could now move about in bed somewhat, and could lie on the left side. Arm still kept in protective dressing.

37th day: Patient wished to get out of bed, saying that he was relieved of all the symptoms for which he came into the hospital.

40th day: All cardiac stimulants were omitted. From the 43d to the 47th day the patient had a slight attack of tonsillitis, from which he quickly recovered.

52d day: All protection to the arm was removed.

53d day: The right arm was swollen. There was no pain, but there was still a sensation of numbness in the arm.

59th day: The arm remained swollen for three or four days. The patient sat up in a chair for four hours.

60th day: The loss of strength in the right arm was felt more than when he was in bed.

62d day: Walked up and down the ward without fatigue.

63d day: Complained of slight pain at the seat of operation. Could use his right arm to write.

69th day: Walked over to the operating theatre, and was shown at the clinic without inconvenience to himself.

73d day: The patient had been up and about ward for over a week; slight edema of the ankles occurred at night. A mitral and aortic murmur could be heard over the cardiac region. Just over the right sternal notch a pulsating tumor could be felt, which was probably the stump of the innominate artery. Pulsation was not transmitted into the carotid. There was a fair pulse in the right radial, which was constantly increasing in strength and volume. No vertigo or other symptoms of cerebral anemia were present. He was discharged at his own request, and was ordered to take digitalis from time to time.

83d day: The patient walked about, attending to some minor matters of business. Yesterday he walked up and down a hill a quarter of a mile in length. He was feeling well and was gaining in strength daily.

100th day: Came to town again to-day. Complained of some swelling of the feet and ankles. Slight dyspnea.

On the morning of the 104th day, having been perfectly comfortable during the preceding day, the patient sat up in bed, complained of shortness of breath, became very pale, his face was covered with profuse perspiration, and he died in twenty minutes.

The following is the account of the autopsy by Dr. W. T. Councilman:

The body is large, strongly built, well nourished and pale. There is a punctured wound, evidently made by the undertaker, on the left side of the sternum between the third and fourth ribs. A similar puncture in the abdomen to the left of the median line. No preservative fluid had been injected.

On the right side of neck there are two smooth cicatrices, one commencing 6 cm. above the clavicle and to the right of the sterno-cleido mastoid and extending a little below the upper extremity of the sternum in the median line. Another cicatrix of the same length commences at this point and extends along the upper edge of the clavicle. The skin is tightly adherent to a mass of indurated tissue, chiefly at the angle of junction of the two cicatrices. There is a slight depression corresponding to the right sterno-clavicular articulation.

The abdominal cavity contains a considerable amount of clear fluid. Peritoneum everywhere smooth, liver and spleen free from adhesions. Diaphragm in normal position.

The upper lobe of the right lung is free from adhesions, both the parietal and the visceral pleura smooth and glistening. The lower and middle lobes firmly adherent.

The left lung is adherent over lower lobe and the lower portion of the upper. In both lungs there is considerable induration of the apices. The surface is somewhat puckered, the pleura thickened, and bands of indurated tissue extend from the pleura toward the hilus. In this indurated tissue there are a few small caseous and partly calcified nodules. This condition is more marked in the right lung than in the left. The tissue of both lungs hyperemic and firm. The large vessels of lung and bronchi normal.

The pericardium is smooth. The heart is greatly hypertrophied. In the wall of the left ventricle there is a punctured wound made by the undertaker, which passes through the wall of the ventricle and has lacerated the aortic and mitral valves. The myocardium is normal. All the cavities of the heart, particularly on the left side, are dilated. The valves are smooth and normal. The coronary arteries are dilated, the lumen irregular, and here and there in the walls there is marked thickening of the intima. The aorta in its entire extent and the large arteries coming off from it are greatly dilated and thickened. The most marked dilatation of the aorta is in the ascending portion, and more on the right side. The thickening of the arteries is due to the formation of irregular hyaline masses in the intima. In places these patches are yellowish and opaque, but there is no calcification in any part.

The measurements of the aorta are as follows: Just above the orifice, 10 cm. in circumference; at the most dilated portion in the middle of ascending portion, 12 cm.; in the middle of arch, 10 cm.; and at the beginning of the thoracic, 8 cm.

The subclavian artery of the right side (Fig. 1) is thickened and greatly dilated. The intima is smooth, and shows a few yellowish foci. The dilatation affects the circumference of the artery equally. At the commencement of the axillary artery it is 2 1-2 cm. in circumference, and at the point of greatest dilatation is 4 cm. The left subclavian is 3 cm. in circumference, and the carotids on both sides 2 cm. There is a general dilatation of the iliac arteries; and in the right common iliac, just beyond its origin, there is a circumscribed dilatation affecting chiefly the posterior wall.

There is considerable firm cicatricial tissue around the innominate artery and the beginning of the right subclavian and carotid. The innominate artery is completely closed just at the origin of the subclavian and carotid (Fig. 1, *a*). A little firm fibrin is adherent to the artery at the point of closure. The orifice of the innominate artery (Fig. 2, *a*) is considerable dilated. Above the orifice it is still more dilated, the dilatation affecting equally the circumference of the artery. At the orifice it is 4 cm. in circumference, and at the greatest dilatation 6½ cm. The artery is thickened irregularly, the intima smooth and free from fibrin; 3 cm. from its origin the calibre is narrowed. At this point there is a sharp, angular projection of the wall into the artery (Fig. 2, *b*). In the angular projection the media of both sides, closely united to each other, can be made out. At the point of the angle they appear to fuse into one another and are lost in some hyaline cicatricial tissue. The angular projection is only seen on the anterior part of the artery. There is a line of cicatricial tissue which is continuous with the apex of the projection and extends around the entire artery. Toward the right side of the artery there is a ligature (Fig. 2, *c*) within the lumen of the artery. The ligature forms a loop with an inside diameter of 5 mm. There is a distinct knot, and the ligature is held by one end of the knot, which is embedded in the wall of the artery. Above this point there is a narrow part of the artery (Fig. 2, *d*), 1 cm. in length, which extends up to the point where the artery is closed.

The abdominal organs are normal, with the exception of a slight degree of chronic passive congestion and induration of the liver, spleen and kidneys. The right testicle shows a marked degree of chronic interstitial orchitis. The tissue is indurated with bands of fibrous tissue extending from the tunica into the tissue. The left testicle shows a slighter degree of induration. A small amount of fluid in left tunica vaginalis.

The right sterno-clavicular articulation is removed. The end of the clavicle is united with the sternum by fibrous tissue. A part of the costo-clavicular ligament remains. A part of the clavicle and the right side of the upper extremity of the sternum are removed (Fig. 4).

ANATOMICAL DIAGNOSIS.

General arterio-sclerosis, with dilatation and thickening of aorta and large arteries. Circumscribed dilatation (fusiform aneurism) of right subclavian, innominate and right iliac. *Double ligature of innominate artery. Occlusion of artery by the upper ligature, severance of artery by lower ligature with following healing, the ligature remaining within the artery and the continuity of the lumen being restored.* Heart hypertrophy and dilatation. Relative insufficiency of the cardiac valves. Chronic passive congestion of lungs, liver, spleen and kidneys. Ascites. Pleuritic adhesions over lower lobes of both lungs. Old tuberculosis of apices of both lungs, with induration. Chronic interstitial orchitis. Cicatrices on neck from operation wound. Loss of substance of sternum and clavicle at articulation. Syphilis.

MICROSCOPIC EXAMINATION.

Sections were made from the aorta at various places, and from the innominate artery, including the projecting spur at the point where the ligature is adherent (Fig. 2, *b*). The sections of the aorta show the same general condition. The adventitia is thickened, and areas of round-cell infiltration are found around the vessels. Many of these cells have the character of lymphoid cells, others are larger and epithelioid in character. The media shows changes in various degrees. Small areas of round-cell infiltration similar to those in the adventitia are found and in places these extend from the adventitia into the media. The least alteration is found in the media adjoining the adventitia. Here the normal arrangement of the muscular and elastic tissue is preserved. Everywhere adjoining the intima there are various degrees of degeneration. The degeneration is most marked and extends deeper into the artery opposite the places where the intima shows the greatest thickening. In these degenerated places the muscular fibres are atrophic. The distinct lamination is lost and the single fibres run irregularly in the tissue. The elastic fibres cannot be made out. Between the degenerated muscular fibres there is an irregular, hyaline-looking tissue which stains diffusely blue with hematoxylin. The intima is thickened by the formation of a dense hyaline tissue containing few cells. The greatest thickening corresponds to the most marked degeneration of the media. On one of the sections an interesting condition is seen. At a point corresponding to a marked elevation of the intima there is a distinct line of fracture in the media. One end of the fractured media is turned up and distinct, the other end is obscured by the presence of granular necrotic tissue which extends from the intima into the space between the separated portion of the media. At this point the media is infiltrated with polynuclear leucocytes.

The sections of the innominate artery (Fig. 5) show an extreme degree of endarteritis. The adventitia is thickened, cicatricial and infiltrated with cells. There is cellular infiltration of the media with well-marked degeneration of the muscular and elastic tissue. The intima is greatly thickened. On the distal side of the spur (Fig. 5, *a*) there is a mass of refractive, hyaline-looking tissue containing much nuclear detritus. In places there is much hyaline fibrin, and remains of blood-vessels can be seen. In a few places the mass is covered by the cells of the intima. At the beginning of the projecting spur both of the muscular coats in contact with each other can be made out. Toward the extremity of the spur both coats pass into hyaline necrotic tissue. At the lower side at the beginning of the spur the muscular layer is broken across, one end is continuous with the spur, the other is adherent to the bend of the upper portion. All around this area there is dense cellular infiltration which extends from the adventitia into the projection and between the two muscular layers. At this point all this tissue is fused into a necrotic hyaline mass.

This case is one of arterio-sclerosis affecting the aorta and the large arteries. There is everywhere marked degeneration of the media, which has been followed by dilatation of the arteries and thickening of the intima. There is a general dilatation, and in places a more circumscribed fusiform dilatation. One of the sections shows, in addition to the degeneration of the media, a fracture of this, with separation of the ends. The most interesting feature of the case from the pathological point of view is the condition found at the proximal ligature of the innominate. The point where the ligature was applied corresponds to the apex of the projecting spur and to the line of cicatrix in the intima continuous with this. The ligature did not bring the artery together equally, but the anterior portion, which was probably thinner, was drawn in toward the posterior. There is a fracture of the media which does not correspond to the line of ligature and which probably resulted from injury at the operation. This ligature gradually cut its way through the artery and cicatricial tissue formed behind it. It is most remarkable that the cutting of the artery by the ligature should have been so even that the entire ligature with its knot should lie in the lumen of the artery. It is not possible that it could have cut through the artery at the time of its application or shortly afterwards. This ligature was of great importance in taking the strain of the aortic pressure from the distal ligature until it was included in the firm cicatricial tissue. The cutting through of the ligature was probably materially assisted by the pressure of the blood in the dilated artery. It is curious that no fibrin should have been found about the ligature. It was not examined microscopically, but it had probably become organized and covered with a smooth layer of the intima.

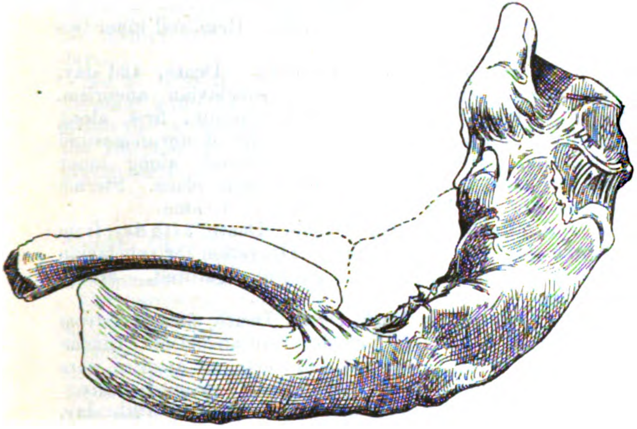

Fig. 4.

Sterno-clavicular articulation, showing loss of substance of sternum and end of clavicle on right side.

The diagnosis of syphilis was made from the interstitial orchitis.

The case which is here reported seems to teach some very important lessons, and they are:

(1) That a patient with general arterio-sclerosis and an enlarged and dilated heart may be kept under ether an hour and a half, subjected to a severe operation and recover with but little shock.

(2) That while the ligation of the innominate artery is not of necessity fatal, yet it will always be an extraordinary operation, fraught with danger from the cutting off of an extensive area of circulation. The removal of the sterno-clavicular articulation and such a portion of the sternum as may be necessary, makes the performance of the operation more practical and one of relative simplicity and safety.

(3) That the absence of pain or marked discomfort following the operation, the complete relief of all the patient's symptoms and his almost uneventful recovery are remarkable.

(4) That the secondary hemorrhages which have occurred in almost all of the recorded cases were undoubtedly due to local sepsis, and that the recovery of this case was due to the accuracy with which it was possible to place the ligatures and to the asepsis.

(5) That if the innominate is ligated at all, two ligatures are necessary, one to act as a breakwater by obstructing the constantly recurring waves of blood coming from the aorta.

(6) That the collateral circulation was principally established in this case by a downward stream of blood from the right carotid and vertebral arteries into the right subclavian artery. That while the fusiform aneurism had shrunken, there was very little fibrinous clot above the second ligature (*vide* plate). This would lead me in another case of fusiform aneurism in this situation to ligature the carotid, if possible the subclavian in its first part, and, if practical, the vertebral.

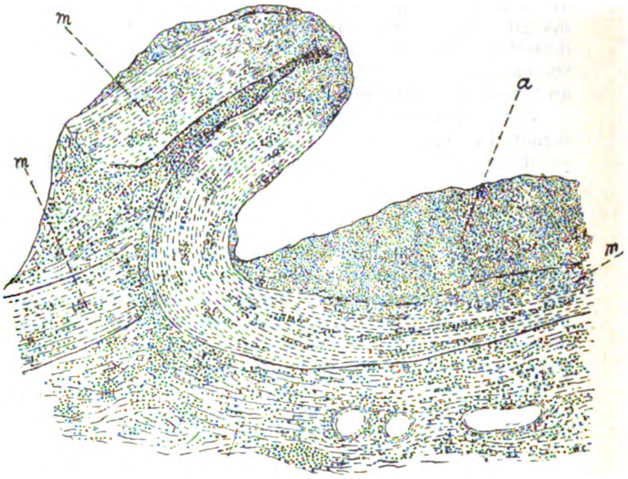

Fig. 5.

Section of innominate artery, through *b*, Fig. 2. *a*, Thickening of intima in artery at *d*, Fig. 2. *m*, *m*, *m*, Media. Further explanation in text.

(7) That the unique behavior of the first ligature that was applied to the innominate is perhaps the most interesting fact which we learn from this case. When the innominate artery was tied something in the wall was felt to give way. The ligature gradually cut its way through the coats of the vessel, followed by an inflammation with organization which prevented a secondary hemorrhage, and finally rested, organized and probably covered with a smooth layer of the intima, inside the innominate artery. This places a new fact at our disposal as regards final disposition of the ligature.

OPERATIONS.

No. 1. Valentine Mott, New York, 1818. Death, 26th day, by hemorrhage. Silk ligature. Operation: A transverse incision just above the clavicle, and carried to the upper part of the sternum, terminating immediately over the trachea, to the extent of three inches. A second incision, about the same length, extending from the termination of the first, along the inner edge of the sterno-mastoid muscle. The triangular flap was dissected back; cautious division of sternal part of mastoid, and as much of the clavicular portion as the size of the wound permitted, and the flap reflected up. Aneurism of innominate, carotid and subclavian.

No. 2. Graefe, Berlin, 1822. Death, 68th day, from hemorrhage. Operation for subclavian aneurism. Longitudinal incision along anterior edge of sterno-mastoid down to sternum. Ligature not described.

No. 3. Norman, Bath, 1824. Death, 3d day, from hemorrhage. Operation for subclavian aneurism. Ligature and operation not described.

No. 4. Arendt, St. Petersburg, 1827. Death, 8th day, from sepsis. Operation for subclavian aneurism. Ligature not described. Operation: Incision three and a half inches long, on inner border of sterno-cleido-mastoid to half an inch below border of sternum.

No. 5. Hall, Baltimore, 1830. Death, 6th day, from hemorrhage. Operation for subclavian aneurism. Ligature and operation not described. Up and walking about 5th day.

No. 6. Bland, Sidney, 1832. Death, 18th day, from hemorrhage. Operation for subclavian aneurism. Ligature, thread. Operation: Incision made, extending upwards about two inches from the inner edge of the sternum, and about an inch and a half downwards, below the inner margin of that bone. The sternal insertion of the mastoid muscle was divided, and dissection further prosecuted by the careful separation of the fibres of the sterno-thyroid and sterno-hyoid muscles in their longitudinal direction.

No. 7. Dupuytren, Paris, 1834 (reported, but not performed by him). Death, 3d day, from hemorrhage. Operation for subclavian aneurism. Operation and ligature not described.

No. 8. Lizars, Edinburgh, 1837. Death, 21st day, from hemorrhage. Operation for subclavian aneurism. Ligature not described. Operation: Incision made, beginning at about one inch over the sternum, and extending four inches along the inner margin of the sterno-mastoid muscle. The sterno-hyoid muscle was then carefully divided, bringing into view the sterno-thyroid muscle, which was cut across in a similar manner.

No. 9. Hutin, Paris, 1842. Death, 12 hours after operation, from hemorrhage. Operation for secondary hemorrhage after a penetrating wound. Ligature and operation not described.

No. 10. Gore, Bath, 1856. Death, 17th day, from hemorrhage. Operation for subclavian aneurism. Hemp ligature. Operation: Usual longitudinal incision, and sternal attachment of sterno-mastoid were divided.

No. 11. Pirogoff, St. Petersburg, 1856. Death, 48 hours, from probable septicemia. Operation for subclavian aneurism. Ligature and operation not noted.

No. 12. Cooper, San Francisco, 1859. Death, 9th day, probably from sepsis. Operation for subclavian aneurism. After 5th day became restless, had dyspnea, retention, etc., till death. Ligature not described. Operation: Incision made, four inches long, in a line parallel, and half an inch above the upper margin of the clavicle, commencing internal to the sterno-clavicular articulation, and terminating near the anterior margin of the trapezius muscle. A transverse incision was then made, commencing a little to the inner side of the centre of the first, and extending upwards, external to the sterno-cleido-mastoid muscle, terminated two and a half inches above. The summit of the sternum and the sternal extremity of the clavicle were removed. This barely made room sufficient to enable one to reach the arteria innominata, owing to the large size of the aneurismal tumor at that point.

No. 13. Cooper, San Francisco, 1860. Death, 34th day, from hemorrhage. Operation for subclavian aneurism. Ligature not noted. Same operation as before, a portion of the sternum and clavicle being removed.

No. 14. Smyth, New Orleans, 1864. Recovery. Operation for subclavian aneurism. Carotid and innominate ligated, and 54 days later the vertebral also ligated. Ligature not noted.

No. 15. Lynch, 1867. Death, 12th day, from hemorrhage. Operation for secondary hemorrhage after gunshot wound. Ligature and operation not described.

No. 16. Porter, Dublin, 1867. Died of hemorrhage six weeks after. Operation for subclavian aneurism. Ligature not described. Clamp applied to innominate for three days and then removed. Mott's operation, V-shaped incision.

No. 17. Bickersteth, Liverpool, 1868. Death, 9th day, from hemorrhage. Operation for subclavian aneurism. Silk ligature. Operation: The usual triangular incision was made, dividing the sterno-mastoid, the sterno-hyoid and the sterno-thyroid muscles. Passed a lead wire around the innominate and held it by a clamp. Two days after, the wire separating, a silk ligature was applied to the artery in two places.

No. 18. A. B. Mott, New York, 1868. Death, 23d day, from hemorrhage. Aneurism burst into pleural cavity. Operation for subclavian aneurism. Mott's operation. Innominate and carotid tied.

No. 19. Partridge, Calcutta, 1870. Death, 1½ hours after, from hemorrhage. Operation for secondary hemorrhage. Previous operation, ligature for aneurism of carotid 13 days before. Operation and ligature not described.

No. 20. Buchanan. Death in a few minutes from shock. Operation for subclavian aneurism.

No. 21. O'Grady, Dublin, 1873. Death, 20 hours after operation, from shock. Operation for subclavian aneurism. Ligature and operation not described. Removed inner two inches of clavicle.

No. 22. Thompson, Dublin, 1882. Death, 42d day, from hemorrhage. Operation for subclavian aneurism. Tape ligature of ox-aorta. Two incisions: first, along clavicle, beginning with anterior border of sterno-mastoid muscle and extending outwards; second, along inner border of same muscle, beginning at same place. Sterno-mastoid, sterno-hyoid and sterno-thyroid divided.

No. 23. Banks, Liverpool, 1883. Death, 37th day, from hemorrhage. Kangaroo tendon. Operation for subclavian aneurism. Innominate and carotid ligatured. Mott's operation.

No. 24. Bull, New York, 1884. Death, 33d day, from hemorrhage. Operation for subclavian aneurism. Innominate, right common carotid and vertebral arteries were all ligatured simultaneously with a double catgut ligature.

No. 25. May, Birmingham, 1886. Death, 19th day, from hemorrhage. Catgut ligature. Operation for subclavian aneurism. Incision along inner third of clavicle and a second down line of common carotid, two meeting in episternal notch. Flap dissected back, and sterno-mastoid, sterno-hyoid and sterno-thyroid muscles divided.

No. 26. Durante, Rome, 1887. Death, 16th day, from hemorrhage and hemiplegia. Operation for subclavian aneurism. Mott's operation. Innominate, carotid and vertebral ligatured.

No. 27. Lewtas, India, 1889 (Mendon Hospital Peujab). Recovery at report, 43 days after. Catgut ligature. Operation for hemorrhage following traumatic aneurism of subclavian. Ligated carotid and innominate. Incision along inner border of lower end of sterno-mastoid. Partially cut sterno-hyoid and sterno-thyroid.

No. 28. Coppinger, Dublin, 1893. Recovery when exhibited at end of 42 days. Operation for subclavian aneurism. Innominate and carotid both ligated. Operation and ligature not described.

No. 29. Burrell, Boston, 1895. Recovery, all symptoms relieved and patient out and about. Two silk ligatures on innominate. Operation for fusiform aneurism of carotid, subclavian and innominate arteries. Death from arteriosclerosis and an enlarged and dilated heart on the 104th day.

Bardenheuer has a number of times exposed the innominate artery and the contiguous parts by resection of a portion of the manubrium sterni and the sterno-clavicular articulation, while removing tumors which involve the root of the neck. He is convinced from his experience that the ligature of the innominate can only intelligently be carried out by resection of a portion of the sternum and sterno-clavicular articulation.

Bujalski, of St. Petersburg, is said to have ligatured the innominate artery twice. No published reports of the cases can be found, and they are considered by most authors not sufficiently authentic to be classed among the others. Not given by Thompson, because he said he could not verify them. Given by Le Fort, also by Velpeau.

UNFINISHED OPERATIONS.

No. 1. Porter, W. H., Dublin, December, 1831. Patient up and about when last reported on the 61st day. Operation for subclavian aneurism.[2] Innominate exposed, which was greatly dilated. Impossible to put ligature around. Wound dressed and healed.

No. 2. Hoffmann, New York, 1839. Operation for subclavian aneurism. Exposed the innominate, intending to ligature. Finding the vessel so large, he considered it inexpedient to proceed and abandoned the operation.

No. 3. Key, London, 1844. Patient died 23d day after operation. Attempted to ligature innominate for aneurism of the innominate, but had to desist on account of size of tumor.

No. 4. Peixeto, Rio Janeiro, 1851. Silk ligature. Common carotid had been ligatured previously for a tumor of the ear, and several hemorrhages resulting, an "expectant" ligature was passed around innominate in case of further hemorrhage, but it was not tightened. No further hemorrhage occurring, it was removed in five days.

No. 5. Charity Hospital, New Orleans, 1894. In a personal letter Dr. Edmond Souchon speaks of a case in which the innominate was exposed by removal of a part of the sternum, but not ligatured because it was found so greatly enlarged.

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MODERN VIEWS OF THE NATURE AND TREATMENT OF EXOPHTHALMIC GOITRE.[1]

BY JAMES J. PUTNAM, M.D., OF BOSTON.

THE various problems connected with the origin and treatment of exophthalmic goitre, or Graves's disease, as we may justly call it, have long been and are long likely to be fascinating objects of speculation and research for the physician and the pathologist. Not only have the frequency of the affection and its resistance to ordinary methods of treatment, its striking and mysterious symptoms, its obscure relationship to so many other diseases of the nervous system, inspired the wish to probe its secrets deeper, but it has shared, to a considerable extent, in the lively interest which attaches to the recently discovered functions of the thyroid gland, and has thus attracted the attention of surgeons and physiologists in large measure.

Its literature has rolled up to an enormous pile; but, fortunately, it has been brought better within the reach of the ordinary student from having been carefully collated in a few exhaustive monographs published within the past year. Yet, so far are we from positive knowledge, that almost each one of the writers of these essays, all having the same facts before them, has a somewhat different theory to propose as to the nature of the malady.

I should hesitate then to bring before you a subject so confused, were it not for its intrinsic fascination, for the new and important observations, especially in the line of therapeutics, and for the fact that although we cannot arrive at positive conclusions, yet the very study of the problems involved is an instructive education.

The principal theories of the disease are three in number:

(1) That it is due to localized lesions of the medulla oblongata.

(2) That it is a neurosis.

(3) That it is of toxic origin, and that the existence of the poison is in some way related to disease of the thyroid gland.

As our knowledge and our pathological and physiological conceptions widen with the advance of time, it may appear that each of these views contains some part of the truth, and that what we need is the generalizing touch of some deeper student and more prophetic genius to unite them all.

(1) It is almost imperative to admit that the medulla oblongata is in some way, directly or indirectly, involved, for in that rich and mysterious area lie the principal centres of cardiac activity and regulation, of the vaso-motor system, of the sympathetic nerves, the centres related to the digestion of sugar, and many more, while close by are grouped the centres for the ocular muscles.

This region is also, in a sense, an important emotional centre, for, remote as it is from the cerebral cortex, which is the sanctum of our higher interests, lesions of the medulla are very prone to give rise to emotional manifestation, and so a new relationship to Graves's disease is established. This is an important matter because it involves the principle that any influence which excites the bodily symptoms of an emotion is likely to excite the emotion itself.

Again, skilful investigators have actually succeeded, experimentally, in exciting, through mutilations and excitations of the medulla oblongata and the nerves that spring from it, some of the most typical symptoms of Graves's disease.

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[2] Operation described on p. 99, vol. xvii, Guy's Hospital Reports.

[1] Read before the Massachusetts Medical Society, June 11, 1895, and recommended for publication by the Society.

The objection to the medulla oblongata theory, in the sense in which it is generally upheld by its supporters, is, first, that it is not proved; second, that it is not probable. It might even be said, strictly speaking, to be disproved, for although gross lesions have been found in the medulla in several cases — congestion, small hemorrhages, degeneration of the restiform body — they are neither uniform nor constant, and so are probably secondary, not primary.

Nutritional lesions there may well be, and finer methods of research may find them out, but we touch here upon the domain of the *neuroses*, and that introduces a new problem which we must consider later.

On general grounds the theory is improbable, because it is not inadequate to explain the vast array of symptoms that claim our notice. There is no other disease of the medulla which gives rise to anything comparable. The *animus*, so to speak, which has led some pathologists to search for gross lesions in the medulla, though the search seemed to be so often in vain, has been the laudable desire to substitute the evidence of the senses for vague theory, and a sort of hatred of the term "neurosis," as meaning everything and nothing. But this feeling should not be allowed to entice us too far.

A good theory may be more useful than a partial observation of fact, and though we cannot yet define the term neurosis with complete satisfaction, we are surely in better position than ever before to look forward to the time when a good definition will be practicable, and to divine its scope.

(2) But the theory which of late years has inspired the most widespread enthusiasm, is that which refers the symptoms of Graves's disease to a toxic cause, and assumes that the poison which gives rise to it is either formed in the thyroid gland or else, being formed in other tissues, gets into the circulation in a noxious form through lack of the supposed antitoxic properties of the thyroid secretion. I may say in passing that this toxic theory is not the only thyroidal theory of Graves's disease. It has long been known that large goitres could cause, perhaps by irritation of the nerves in the neck, disorders of the heart's action, and even exophthalmus and other symptoms of true Graves's disease. Usually the typical symptom-complex does not occur in these cases of so-called pseudo Graves's disease, though it is a matter for grave doubt whether the partial and secondary forms of the affection ought to be distinctly separated from the more complex and typical forms. In my opinion the local action of the goitre does often contribute a certain share to the clinical picture, in accordance with a principle which I will later endeavor to state, although it does not act as the whole cause of typical cases.

The merits of the toxic theory may be characterized as follows: It is, in the first place, entirely conceivable that the symptom-complex of Graves's might be, in one sense, of toxic origin. There is no more reason why this set of symptoms should not be called out by a poison having special chemical characters and affinities than that strychnia, atropine, or the toxic cause of myxedema, if such be its cause, should produce their characteristic results. Cocaine, indeed, is said by Durdufy to produce symptoms in several respects resembling those of Graves's disease. It need not be even assumed that the disease of the thyroid is the first link of the chain. A disturbance of its innervation might conceivably be the influence which set the match to the train.

This toxic theory comes moreover at a good time for receiving favorable notice. "Toxic" is nowadays a good word to conjure by. The enormous impulse which bacteriological investigations and the study of ptomaines and leucomaines and nucleins, and the highly toxic substances generated in consequence of the removal of the suprarenal capsules and other glands, have given to the doctrine of the organic poisons, has lent to the term "poisoning" a wider meaning than it has ever held before. Men are now prepared to believe that anemia is a toxic disease, and even that a large number of mental affections, and possibly even neurasthenia and hysteria, should be included in the same category. Of course, in a sense, every change in nutrition of a morbid kind may be called toxic, and that the only question is how far it is worth while to extend the term at present.

But while we may admit that the symptoms and pathological changes which underlie Graves's disease might conceivably be induced by a poison of some sort, it is another matter to furnish the proof that this occurs, or that the assumed poison is derived either directly or indirectly from the thyroid gland. The arguments which have been used in favor of this view are in the main the following:

(1) Many cases are now on record showing that Graves's disease may pass over into myxedema, as the degenerative changes in the thyroid gland become more serious. Furthermore, myxedema and Graves's disease may coexist in the same family, and one or two instances are on record where the two diseases have existed side by side in the same individual (Sollier and others).

(2) It has been noticed that when thyroid preparations are given to myxedematous patients for therapeutic reasons, the pulse sometimes becomes rapid, and feverishness and loss of flesh, diarrhea, and other symptoms of nervous excitability make their appearance, such as suggest the nervous erythism of Graves's disease, though so far as I know a typical picture of Graves's disease has never been produced in this way. Similarly, when thyroid preparations are given to persons in health, analogous results occasionally occur; and conversely, these preparations are usually not well borne by patients with Graves's disease. Again, in the first stage of the cachexia which follows the removal of the thyroid, tremors and tetany and other signs of nervous disturbance often make their appearance.

(3) There is a certain contrast between the symptoms of Graves's disease and those of myxedema, which at first sight seem very striking. This contrast is tersely expressed by Möbius, who says: "In one case we have enlargement, in the other diminution in the size of the thyroid gland; in the one a rapid, in the other a slow heart beat; in the one we have a fine skin, warmer than usual and inclined to sweat, while in the other the skin is thick, cold and dry; on the one hand we see increased mental irritability, a condition of irritable weakness; on the other, slowness and dulness of mental action."

(4) The urine in Graves's disease is much more toxic than that of health, though injections of it into

animals do not give rise to the typical complex of Graves's disease.

(5) Belladonna, which checks secretions and might be supposed to exert its action in case of the thyroid, has been thought by some observers to be of service in Graves's disease, though I have not found it to be so.

(6) The excision of portions of the thyroid gland in Graves's disease is sometimes strikingly productive of relief to the symptoms, and the same may be said of other modes of treatment, such as electricity or injections of iodine, which are directed to diminish the size of the thyroid.

(7) While it is generally held that *thyroid* preparations rather aggravate the symptoms of Graves's disease, several cases are now on record, indicating that preparations of the *thymus* have a very beneficial action in this same affection. It might perhaps be urged, though I do not remember to have seen the suggestion made, that the reason that young children are, as a rule, exempt from Graves's disease, is that the thymus persists in them for a considerable time.

(8) The histological investigations of Greenfield and others have been held to indicate that the changes that occur in the thyroid gland in Graves's disease are such as would be likely to go with increased activity as a secreting organ.

On these and other grounds it is strongly held by many writers that the symptoms of Graves's disease are due to an excess of the thyroid secretion or to its being modified in character. But interesting as these arguments are, a careful examination of them seems to me to show that the thyroidal secretion theory of Graves's disease is still extremely vague and lacks a sound basis.

The strongest argument in favor of the thyroidal theory is perhaps that drawn from the therapeutic action of thyroidectomy, and as that is a subject of great practical interest also, it is well worthy of your consideration.

In spite of the great attention which the surgical treatment of goitre in general has received for a very long period, it is only within a comparatively few years that thyroidectomy or kindred operations have been done in Graves's disease, if we except a few isolated cases. Two years ago I was able to collect only about fifty cases of such operations, but they have been multiplied with greater rapidity. Kocher, the surgeon of Berne, declares, in his recent and very valuable paper, that he alone has done over fifty such operations, out of a total of some two thousand goitre operations of all sorts. The operations have been practically of three kinds: partial thyroidectomy; ligature of the thyroid arteries — of which, according to Kocher, only three out of the four should be tied; and exposure of the gland by median incision (Jaboulaye), after which it is separated from its bed, and left, covered with an antiseptic dressing, to dry and shrink, between the lips of the open wound in the skin, the edges of which are stitched back. The results of all these operations, of which a ligature of the vessels is probably on the whole the best, have been very satisfactory, and there would be every reason for advising them in a given case, were it not that every now and then a death occurs for which no satisfactory reason can be found. I have recommended the operation myself in two cases, and it was skilfully carried out by Dr. J. C. Warren. One of the patients died on the eighth day after operation, though she was a young and healthy girl and the wound had been doing perfectly well. The other patient lay at death's door for some days, but since then has been gradually though slowly improving, and now, at the end of two years, is able to say that she is much better than before the operation was done. During the first few days after she was operated upon Dr. Warren called my attention to the fact that a large quantity of thyroid secretion was escaping from the wound, and it occurred to us both that her serious prostration might be due to poisoning from this source. The same idea has suggested itself to others, and Kocher dwells on it at some length. He refers particularly to the fact that in one of the desiccating operations *à la* Jaboulaye, to which I have referred, it was noted that the exposed surface of the gland sweated out a quantity of fluid which was presumably thyroid secretion. It is, however, difficult to see why, if this poisoning theory of these deaths is correct, they should not occur in a larger number of cases, nor why the fatal end should occur so suddenly when the patient had previously been doing so well, as happened, for example, in Dr. Warren's case, and in another described to me by a colleague in New York.

It is interesting to note that the improvement after operation sometimes takes place quite rapidly, sometimes very slowly.

But there are other methods besides thyroidectomy which, by acting on the gland itself, occasionally produce favorable results in Graves's disease, and so lend support to the thyroid theory. Such are the internal use of iodine, which has been revived in the clinics at Berne. The local use of electricity comes under the same category, especially when used by the method, which I believe to be the best one, of powerful and prolonged Faradic currents applied so as to literally squeeze out the contents of the gland. This method, which is a modification of those in earlier use, was first suggested, I think, by Dr. W. J. Morton, of New York, and in our hands at the Massachusetts General Hospital it has proved of real service.

In the same connection is, perhaps, to be mentioned the use of thyroid and thymus extracts.

Every one is now aware that among the extraordinary results of feeding with thyroid extracts — results which embrace improvement in the nutrition of the skin and its appendages and the relief of obesity — it has been observed by v. Bruns, and now by many others, that the ordinary forms of parenchymatous goitre, especially in young persons, sometimes really melt away with great rapidity.

Occasionally, and in spite of the tendency to increase of the nervous symptoms under this influence, the same treatment leads to a diminution of the goitre in Graves's disease as well, and to an eventual improvement in the condition of the patient, a fact which is a blow to the excessive-thyroid-secretion theory of the disease.

Still more recently, Owen and Miculicz discovered that thymus extracts seem to be still more apt to relieve the symptoms of Graves's disease, though without necessarily causing any great reduction in the size of the gland. These observations are of great scientific and practical interest, but they are as yet too few in number to make it necessary to dwell upon them at length. [See a paper by Cunningham in the *Medical Record* of June 15, 1895; and an editorial in the

Boston Medical and Surgical Journal, July 11, 1895.]

But in spite of the fascination of the thyroidal-poisoning theory of Graves's disease, and the high ability of the men who support it, it cannot be said to have as yet fully established itself, or not, at least, as the exclusive cause of the affection.

The theory has taken three forms:

(*a*) That the thyroid secretion is secreted in excess;

(*b*) That it is altered in character;

(*c*) That it fails to neutralize other organic poisons formed in the course of general metabolism.

The aguments in support of each of these different views should be different, but the supporters of the general theory are too apt to select those parts of each which seem favorable and to apply them to the support of the general view, which thus escapes criticism by its vagueness. It can hardly be that an excess of thyroid secretion is the invariable cause of Graves's disease; for the nervous symptoms, especially the tachycardia, may begin years before any goitre is observable. It is true that even a normal sized goitre may possibly have a hypersecretion, yet it remains to be proved that it does so.

Again, as patients improve in their nervous symptoms the gain is by no means always proportionate to a diminution in the goitre, though usually it is so.

Finally, thyroid preparations do not always aggravate, but sometimes relieve the symptoms; and though Kocher suggests that this may be only when they act by diminishing the size of the goitre, yet the explanation is manufactured for the exigency and as yet lacks proof.

Neither is it probable that a *vitiation* of the thyroid secretion is the invariable cause. For the removal of a part of a morbid goitre should not cause this vitiated secretion of the rest to change its character; nor would the squeezing out of the vitiated contents of a diseased gland by strong Faradic currents be likely to relieve the symptoms, at least without making them worse for a time, which does not happen. And if it is a vitiated secretion which is in play, then there is no special reason why the fact that the addition of a little more normal secretion, given therapeutically, makes the patient either better or worse, should count as an argument in favor of the view; nor ought the contrast between myxedema and Graves's disease, which might, if well established, count in favor of the hypersecretion theory, be reckoned as an argument for a vitiated secretion or of some other non-neutralized poison of whose physiological action we know nothing.

Obviously, we must wait for further light before deciding. It has even been suggested that the enlargement of the thyroid may be a conservative effort on the part of the organism to secure an increased amount of secretion for nutritional purposes, and that it grows smaller under the influence of thyroid extracts given therapeutically, because these act as a substitute. This reasoning has been applied, to be sure, more especially to the case of the ordinary non-exophthalmic goitre, and the arguments in its favor are not forcible enough to command acceptance. It shows, however, the complex nature of the problem and the way in which theory runs loose in attempts to solve it.

Meantime, it must not be supposed that the only remedies of value are those which act directly on the thyroid gland. The time-honored treatment by complete rest is still one of our best measures; and of new methods, Kocher himself, on the basis of observations made by his assistant, has advocated the use of sodium phosphate, as diminishing the irritability of the nervous centres in the medulla.

We are trying it on a considerable number of patients now under treatment at the hospital, but cannot speak positively of the result.

(3) Finally, it is imperative to say something of the "neurotic" theory of the disease, though the problem is so complex that I approach it with diffidence, the more so that I must condense into a few sentences an argument which should occupy a volume.

It is obvious that if satisfactory conception of this sort can be framed it would have the great advantage of bringing Graves's disease into line with the other members of the vast neuropathic family of diseases, the psychoses, the neuroses, the degenerative affections with which it is clinically so closely related.

The first question is, What do you mean by a neurosis? Is it a "functional" or an "organic" disease, to use the current terms? In this connection I would call attention to a valuable paper by Professor Obersteiner of Vienna, published in the *Wiener klin. Wochenschr.*, April 25, 1895, though I do not wholly agree with his reasoning or conclusions. Obersteiner points out, what is certainly true, that many conditions which have been called "functional," that is, have been supposed to be without anatomical basis, are being classed, thanks to our better methods of research, among the diseases of known pathology. At the same time, he believes that there are and probably always will be a certain number of affections, or symptoms (which may exist either independently of the so-called organic nervous diseases or in conjunction with them), having the peculiarity that they are due to a quasi-physiological disorder, if the expression may be allowed, of the higher functions of the brain; that they are, in short, allied to the psychoses. Many hysterical symptoms are of this character. This is a useful generalization and akin to the explanation which I have to offer, but should approach the problem in a somewhat different way.

Speaking broadly, one may divide the diseases of the nervous system into three principal classes: (*a*) those where certain nerve elements degenerate, mainly because of inherent weakness; (*b*) those dependent on a toxic cause or on impairment of the circulation, that is dependent in a general sense upon their blood-supply; (*c*) those which arise because from one or another cause the harmony which should exist between the different portions of the nervous system is broken. It is in this latter class I think that the neuroses belong, though I may say, in passing, that the same disease should often be classed under more than one heading, the classification here suggested being merely offered to show the different etiological tendencies which are at work.

Much needless discussion has been spent on the question whether in the neuroses and psychoses there is any demonstrable change in the elements of the nervous system.

In one sense the answer is a simple one. The current terms, namely, are meaningless. There is no such thing as a functional disease of the nervous system, if by that is meant one that has no correlate in change of structure. Even fatigue leaves a mark in nerve-cells, which, as we may recognize with pride, a student of Clarke University, Mr. Hodge, was the first to note. The only sense, so far as I know, in which we may not expect to find a structural correlate for a manifestation of disordered function, is where the disorder is adopted, as it were, by the organism, so that it is no longer proper to speak of it as a disorder at all. It is not to be supposed, for example, that such a trick as biting one's finger-nails or scratching one's head, nor even, necessarily, all of the habitual symptoms of such an affection as Graves's disease, would inevitably be registered by any mark transcending those of normal activity and fatigue, though in the end such changes would be likely to occur, and in the case of Graves's disease it is quite probable that by finer modes of research lesions will be found, especially in the medulla oblongata. We know that other affections presumably referable to cerebral or spinal disease, such as diabetes, progressive muscular atrophy, tabes, are occasionally met with in association with Graves's disease. The decisive investigations in this direction must be left for the future, but it may safely be predicted that when lesions are found they will be discovered not only in the medulla oblongata, but in higher and related centres as well, and probably in the peripheral nervous system in addition, as Maude has justly assumed.

The essential characteristic of the neuroses and psychoses is, to my mind, that in their origin, and at first, they are quasi-physiological, though morbid, manifestations of cerebral activity.

As one observes the smooth flow of life in a healthy man, all his functions seem so firmly harmonized, so absolutely subordinated to the interests of his conscious personality, that it is difficult to conceive what organized riots, what complex displays of independent action will make their appearance when once this harmony, this healthy interdependence of function, is disturbed by disease.

The laws under which these outbreaks occur are the laws of "dissolution" of the nervous system, and it is the merit of Hughlings Jackson in England, and of Charcot and his followers in France, to have studied them with preëminent clearness of insight.

The point for our notice is that, under the conditions indicated, the multiform nerve functions which, under the normal regime, were kept within their proper channels of usefulness, now, deprived of leadership and control, run riot like a horse that has lost his rider, though it may be, as Dr. Jackson has pointed out, that they act in a real though misguided attempt to meet the exigencies of the movement.

It is for this reason, and because even in disease the likeness to normal action is preserved, that the term quasi-physiological is justified.

Does all the vast array of symptoms of this mysterious Graves's disease form a confused and accidental jumble, or can we find the bond which unites them?

I have already indicated that such a bond has been sought in the anatomical relationship of the nerve centres related to these various symptoms. It has been sought also in the action of some supposed poison generated in consequence of disease of the thyroid gland. Either or both of these hypotheses may be true, but behind, and independent of them, there is, I believe, a physiological or quasi-physiological bond which unites the symptoms of Graves's disease, and this is of a double nature.

(1) They are united by their close relationship to the manifestation of emotion. The trembling hand, the staring eyes, the rapidly beating heart, the sweating skin, the husky voice, the relaxed bowels, belong to the picture of painful expectancy and fear. The likeness, though but a caricature, is too striking to be mistaken, and has attracted the attention of a number of observers, among whom I will mention McKenzie in England, and Peter and Raymond and Sérieux in France, and Buschan in Germany.

It is an important advance in conception and definition, rather than a discovery, of modern psychology, to recognize that outward expression not only illustrates but forms an integral part of the mental state with which it occurs. This is eminently true of the emotions, as James, Lange and Féré have clearly shown. An emotion is an intellectual cognition *plus* a host of bodily states which we can only imperfectly analyze and separate.

In Graves's disease the first impulse to the outbreak is often, if not usually, an emotional cause. In a case of my own, a woman went down a dark stairway, and at the bottom was suddenly seized and roughly handled by a man, and then and there her disease began. Many such cases are on record (see *Brain*, 1894, p. 221, and Buschan).

But, it will be urged, many cases of Graves's disease begin insidiously without emotional antecedents, and sometimes in such a manner as to make it more than probable that a disease of the thyroid gland, or it may be even an irritation starting in the nasal cavity or elsewhere, set the match to the train. I have observed myself an interesting case where prolonged vomiting gave the first impulse. It is also true that the disease may run its course without being associated with any high degree of emotional display.

The explanation for this I have already tried to suggest. We cannot tell absolutely why the predisposition to this or that special neurosis exists, but, given the predisposition, it is enough to call out, by some local excitement, any one of the symptoms which belong to the quasi-physiological group, and the rest will make their appearance. Just as we can work ourselves up into the outward show of passion for our own amusement, and without feeling passionate, so the outward shows of passion may be called out, it is fair to think, by some purely reflex cause, without their usual emotional accompaniment, if only there is sufficient coherence between the different elements of the symptom-complex to form a tolerably definite group.

In a predisposed person, either a prolonged attack of tachycardia, or an enlargement of the thyroid, or a poisoning from thyroid secretion, or any one of many causes may bring on the disease.

(2) I have tried to point out how this array of symptoms only indicates one of the modes of dissolution, so to speak, of the nervous system, and that herein the relationship of Graves's disease to the other degenerative neuroses finds itself explained. Even when regarded as a symptom-complex of agitation and fear, it is still, not only as subserving some definite end, that the symptom-group is to be looked upon, but in part as a phenomenon of a paralytic or degenerative character. This is indicated by the term embryocardia, which has been used as a substitute for tachycardia, to indicate the degenerative nature of the heart failure.

In fine, the best explanation of Graves's disease and of its relation to the affections observed with it — so far as an explanation is possible — seems to me something like the following: The cardinal symptoms of the disease are united by a physiological bond, in that they form a group characteristic of strong emotion of the nature of expectant fear. Even the conjoined affections are all excitable under the influence of emotion, as an examination of Féré's important volume on the pathology of the emotions will show. To a certain extent the numerous symptoms of Graves's disease form a coherent group, and are capable of indedependent existence as a "segmented" piece of cerebral activity, to use the term of Prof. Josiah Royce. Although often excited by emotion, this segmented group of activities may be called out in various other ways. The prolonged existence, for example, of either one of the symptoms may after a time call out the rest. In this way, emotional excitement, irritability of the medullary centres, goitre, tachycardia, may serve as the starting-point of the whole assemblage of symptoms. In this way, too, the increased secretion, or any other disease of the thyroid, may contribute to the nervous erythism, general or local, or increase the tendency to the outbreak, in an otherwise predisposed person.

If one lobe of thyroid is the larger, or if nasal or uterine irritation exist, these influences will contribute their share to the modification of the symptom-complex.

Conversely, any treatment which tends to relieve any part of a train of morbid processes — the general nervous excitability, the uncontrolled action of the heart, the local irritation starting from any part of the body or from the thyroid — will contribute to the cure of the patient.

In short, I regard Graves's disease as a "degenerative neurosis"; as one of the ways in which the nervous system suffers "dissolution"; as marking one of the many lines of cleavage at which the nervous functions break when exposed to strain.

DISCUSSION.

Dr. George B. Shattuck, of Boston: Dr. Putnam has certainly stated for us in a very admirable manner all that is to be said at the present time with regard to the modern views of the nature and treatment of exophthalmic goitre.

My only complaint in regard to his paper would be that it was possibly too condensed, too concise.

I am very glad that this subject was taken up here today, and in such a competent manner, for two reasons. One reason is, because the disease about which Dr. Putnam has read his paper, is one of a large group of very complicated and mysterious disorders, and any light which can be thrown upon any one of that number will help us to a better understanding of the entire group.

It is a disease which has been for a long time an opprobrium of medicine, and one which all of us have in the past approached with misgiving as to our ability to procure positive improvement when a case came into our hands.

The other reason I am glad that the subject has been brought up here on this occasion and to-day is, that if it is to be discussed in the Medical Section it is time that it was done. It is one of the numerous diseases which the surgeons seem disposed to wrest from us and include in the department of their universal profession. If we are to discuss it from a medical point of view, it is high time we should begin.

Our reasoning in regard to this disease has been up to the present time, and after listening to Dr. Putnam's paper I still think it continues to be, purely hypothetical. The treatment has been largely empirical, and I am afraid that even now it continues to be so.

I was in hopes that Dr. Putnam would be able to give us a little more encouragement with reference to the treatment; some spar to which we might cling with the hope that we might be carried to the shore of positive knowledge with reference to the general reasoning as to the cause of the disease.

Dr. Putnam has stated very concisely and thoroughly the various forms of treatment which have recently been brought forward with reference to Graves's disease. It is only a very few years ago that an edition of one of the most trusted books on the practice of medicine, by one of our most worthy clinicians, informed us that in the treatment of Graves's disease, iron is useful where anemia is present; strophanthus modifies the rapid action of the heart; no measures are so successful as rest in bed in the recumbent position, with an ice-bag or Leiter's coil applied occasionally over the heart. This is not a very encouraging picture of what could be done for a patient. But we have got beyond such a condition as that. Dr. Putnam discusses the use of the thyroid and thymus extracts, though with but moderate encouragement to be sure. He refers to the methods of surgical interference. Those are of several kinds, namely, the partial extirpation of the gland; the tying of the arteries — the whole or part of them — and the total extirpation of the gland. Then we have internally the administration of the phosphates — the phosphate of sodium, showing some results reported as good so far.

Whatever may be said as to the success of such measures, at any rate they show a certain courage and an inventiveness for combating the disease.

I have had some experience in the administration of the thyroid, though not of the thymus, and I must confess with Dr. Putnam that the results have not been encouraging. They do not agree with the flattering reports of some of the Continental clinicians, who seemingly have much better results. Theoretically one does not see why the thyroid extract should be useful in this disease. It is given in myxedema, a disease accompanied by atrophy of the thyroid; and now we give it in Graves's disease, where we have an hypertrophied thyroid gland.

If we give thyroid extract to cure both of these diseases it is because we say the secretion may be increased, diminished, or perhaps *vitiated*. Our only excuse can be that our measures are empirical and our reasoning hypothetical.

The treatment has to be continued for quite a long period, and the patient, as well as the doctor, must have hope, courage and patience. And there is again the difficulty referred to by Dr. Putnam, that in a great many of these cases the symptoms are aggravated by the administration of the thyroid extract; the action of the heart is increased just as it frequently is in the opposite condition — myxedema, and one often feels like giving up the treatment altogether.

The report of the proceedings of the German Surgical Congress held in Berlin in April is very interesting with regard to the surgical treatment of Graves's disease, and as I remember the accounts of the experiences given there by different Continental operators who have had, in addition to large series of thyroidectomies, a certain number of these operations for Graves's disease pure and simple, I should say that they reported their results as being rather more favorable than Dr. Putnam considers them to have been. Certainly several of the gentlemen at that time stated their strong belief in the efficacy of the operation for the relief and cure of Graves's disease,— they were certain they had seen some cures in their practice. Some recoveries, however, do occur without treatment.

As I said before, I wish that something a little more definite, a little more positive, could be offered us with reference to the knowledge of the cause of this disease, and that some more hopeful forms of treatment might be suggested. Perhaps we are on the threshold of an actual step forward.

Dr. Kocher's last series of one thousand cases, reported at the Surgical Congress at Berlin, gave a mortality of a fraction of one per cent. With such low mortality rate as that, I would not hesitate to recommend a patient to submit to an operation if one could give hope of considerable relief.

These operations were partial. Kocher has given up the total extirpation of the gland on account of the resulting cachexia.

Dr. Putnam: In trying to present so large a subject in so short a time, it has been necessary to condense, to the great detriment of different portions of the topic.

I certainly do not feel at all pessimistic about our ultimately learning to know the nature of the disease or the best therapeutics. My more hopeful feeling perhaps communicates itself to my patients, for it certainly seems to me that I see better results than formerly, both in hospital and private practice, though an absolute cure is perhaps not to be looked for.

I believe that the electrical treatment referred to in my papers is useful. Phosphate of sodium we do not know much about. Rest should be made almost absolute for a time, and if possible out of doors. Thyroidectomies have been beneficial. The only reason we do not recommend them is that now and then an unexpected death results, and we do not care to subject our patients to this risk, though it is a slight one. You cannot tell which patient is going to die.

In answer to the question as to the effect of hypnotism on this disease, I would say that I regard hypnotism (as the word is commonly used) as the last term of a series of agencies which are well calculated to increase the personal influence of the physician, and to enlist the hidden forces of the patient's mind for his benefit. When properly used I think these means may be of great value.

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THE DIAGNOSIS OF MALARIA FROM THE PRESENCE OF PARASITES IN THE BLOOD.[1]

BY PHILIP KILROY, M.D., OF SPRINGFIELD, MASS.

In the subject assigned to me, and as stated on the programme, the word bacillus was inadvertently used. The protozoon of malaria as described by Laveran is an animal parasite belonging to the protozoa, and cannot therefore be properly called a bacillus. It were needless for me to mention the practical interest there is for us in a subject like this. We have most of us had malarial chills occur in the first week of childbed, and fretted and curetted and drained and all that, and without any reason. I remember during the past winter being puzzled for a week in trying to decide whether a patient had typhoid or influenza, to find the disease subside on exhibition of quinine; and the annoying similarity between malaria and some cases of tuberculosis and various forms of sepsis needs but to be mentioned. In this paper I shall simply endeavor to give, and give briefly, the modern belief with regard to the parasites of malaria; and while for the opinions expressed I shall not give credit to whom credit is due, neither shall I claim any for myself.

The parasitic origin of malaria was accepted, and taught even, before the parasite was discovered, — a belief scientifically plausible in view of the endemic occurrence of the disease, the suddenness and regularity of its attacks, as well as the completeness with which it was controlled by drugs; and the rapid deterioration in blood quality which followed even one or two malarial chills suggested the presumption that in the blood would be found some evidence of that which was responsible for the destruction of its corpuscles.

Back in the seventies observers (especially Italian) endeavored to isolate a bacillus from the Istrian marshes and the soil of Campagna, and two authorities succeeded in cultivating a rod-shaped structure, which they believed to be the cause of malaria and which they hastily named bacillus malariæ. And in my days in the medical school — from 1885 to 1888 — the then text-books referred to this discovery approvingly, if not with acceptance. Later observations caused this bacillus to be completely abandoned, and the apparent malarial attacks which its inoculation on rabbits produced were probably ptomaine or surgical fever due to improper asepsis, especially as even to-day it is not certain that rabbits can have malaria. In 1880 Laveran first discovered one variety of a protozoon, which is to-day recognized as the determining cause of the disease, and which we call the polymorphous parasite of Laveran, — polymorphous, for it assumes different forms in different localities and in different types of the disease, and sometimes even in similar types in the same locality. And thus it was that we have had such contradictory testimony by competent authorities, some having observed one variety of the parasite, others a different one. There are four main types of the protozoon of malaria:

(1) Spherical bodies.
(2) Segmented bodies.
(3) Flagellæ.
(4) Transition bodies.

The spherical bodies — which are the most important because the most numerous and most frequently present — are small, movable structures of pale color, hyaline transparent, devoid of nuclei, sometimes showing, when free in the blood, two or three flagellæ or thread-like processes; but when they have invaded a corpuscle or attached themselves to it (and the latter is the more probable occurrence) they are devoid of these ciliary attachments. Having invaded or adhered to a corpuscle, the spherical body rapidly grows in size and frequently exhibits ameboid movements, which give it a constantly changing appearance. These ameboid structures are commonly called plasmodia. The spherical bodies contain granules of black pigment, — the greater the size of the body the greater the number of pigment spots. Sometimes the spots assume a circular arrangement inside the edge of the parasite; sometimes they are irregularly distributed and endowed with movements of very irregular character, sometimes fast, sometimes slow, and in various directions. It is very probable that the ameboid movements of the bodies are due to the movement of these spots, as they have been observed to be coincident.

As the spherical bodies grow in, or on, a corpuscle, the color of the latter disappears, from a destruction of its hemoglobin, the corpuscles gradually become transparent, while the parasitic body becomes a deeply pigmented mass which may now undergo segmentation, forming the second variety, or segmented bodies.

These are also spherical in form, but regularly segmented, with the melanin formed from hemoglobin destruction in the centre, the whole suggesting in appearance a full-blown rose or a marguerite. The segments gradually develop into independent spherical bodies, the decolorized corpuscles are disintegrated, and at the end of two or three days, according to the type of the disease, this new generation of spherical bodies results in a fresh attack.

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[1] Read before the Massachusetts Medical Society June 11, 1895, and recommended for publication by the Society.

The flagellæ, or third variety, are sometimes free in the blood, sometimes (as already mentioned) attached to the spherical bodies. They are long threads, endowed with a rapid, snake-like movement, a movement that frequently sets the neighboring corpuscles in vibration. They are found in about one case in five, but the difficulty of seeing them (it being probably impossible to see them when not in motion) may account for their apparent rarity. Their movements are best observed about twenty minutes after the blood has been taken from the patient. They have a life of their own, but which is quickly killed by quinine.

The transition bodies, which are said to be characteristic of the fall and winter Roman fever, as well as of all the various atypical malarial manifestations, are crescent-shaped bodies, transparent and colorless. They differ from the spherical bodies in that they have but little pigment and that only in the centre, and while the spherical bodies adhere firmly to a blood corpuscle, the transition bodies never do. If these should happen to be in contact with the corpuscle a blow on the slide will easily displace them. Their ends are either sharp or round, and frequently we can discern a fine line on the concave side of the crescentic body, joining the ends. The central pigment is changed hemoglobin. The general appearance and character of these bodies, their size and lack of any evidence of life or motion, has suggested the probability of their being semidestroyed and changed blood corpuscles, a belief which more modern investigation has disproved.

There is an essential difference in the appearance of the parasites of tertian and quartan malaria. In tertian, the ameboid movements of the spherical bodies are more active than in quartan. In tertian the decolorization of the corpuscles is rapid, while in quartan the color remains almost until the corpuscle is disintegrated. The spherical bodies are smaller in tertian, and with smaller pigment spots, than in quartan; but the most striking and most reliable difference is in the process of segmentation; in tertian there being almost twice as many segments formed from one parasite, the segments being naturally smaller. If, then, during a malarial attack we examine the blood, and find decolorized red corpuscles in which a parasite is undergoing segmentation into fourteen to sixteen parts, we can say with positiveness that the fever is tertian; while if there are but seven or eight segments we can diagnose with equal positiveness quartan fever. Quotidian fever is probably not a type, being either double tertian or triple quartan, resulting from the segmentation process maturing on successive days.

At the onset of an attack, or in the fever period, we are more apt to find the spherical bodies. The segmented bodies occur chiefly during the cold stage or in the intervals, while the transition bodies are mostly observed in the chronic forms of malaria, malarial cachexia, and malarial neuralgias, and also in those who have acquired a tolerance for the poison. While, with a good oil immersion lens, we can usually detect the parasites in the natural blood; still, for the sake of precision and to guard against confounding plasmodia with the red corpuscle of poikilocytosis, the blood should be stained. The best results are probably obtained from the dried specimens. A drop of blood is squeezed between two cover-glasses, by means of pincettes rather than the fingers, as the vapor from the latter may change the hemoglobin; when the blood has dried in the air it is heated in the usual way, and then treated with a staining solution. For practical purposes a cover-glass heated for a few minutes in an alcohol flame is dried sufficiently, although an exposure to a temperature of 100 to 120 degrees Celsius for a few hours gives better results. If over-heated, the parasite may become fixed, and not take any stain. In mounting preparations with Canada balsam, the latter should be dissolved in xylol rather than in chloroform or turpentine, as these latter decolorize the corpuscles. The parasites of malaria are best stained by methyl-blue, and a staining fluid consisting of one part of a concentrated aqueous solution of methyl-blue, and two parts of a one per cent. alcohol solution of eosin, gives beautiful results, in which the hemoglobin of the red corpuscles is stained an eosin red, the eosinophilous cells a deep strawberry red, and the ordinary leucocytes and the malarial parasites blue.

DISCUSSION.

DR. FREDERICK W. CHAPIN, of Springfield, referred to the hypodermic use of quinine in the treatment of malaria, as practised under his observation more than twenty years ago by Dr. Frederick D. Lente, of Cold Spring-on-the-Hudson, N. Y. Dr. Lente injected six grains under the skin, after the chill, and one injection was often enough to put an end to a severe attack.

DR. FRANCIS H. WILLIAMS, of Boston: Dr. Kilroy's valuable paper calls attention to a subject which is yearly becoming of more importance to many of us, as malaria is found more frequently now in certain portions of the State than it was a few years ago. The assistance which we may derive from the examination of the blood in these cases cannot be too often emphasized.

The characteristics which Dr. Kilroy points out as distinguishing the parasites of tertian from those of quartan fever are extremely interesting.

My own experience in making the diagnosis of malaria by finding the parasites in the blood has extended over some years, and I have found these blood examinations not only of great assistance in making a diagnosis in some otherwise obscure cases of malaria, but in excluding malaria in cases which simulated it. For example, I recall a patient who was sent into the Boston City Hospital with the diagnosis of meningitis, the head symptoms were marked, the morning and evening temperature chart showed no rise in temperature, and there was no chill. An enlarged spleen suggested to me the advisability of examining the blood, and on doing so I found numerous plasmodia. The patient was given quinine, and when he became rational we found that he had recently arrived from Central America, and that chills had begun when three days out of port.

As an illustration of the assistance in excluding malaria which examinations of the blood offer, I recall a patient who had a daily rise in temperature and a daily chill; he seemed in good general condition; quinine made but slight impression on the temperature and chills; no plasmodia were found in the blood. Later the diagnosis was made clear by signs in the lungs and by finding the bacilli of tuberculosis in the expectoration.

Dr. Kilroy speaks of the different varieties of parasite for the tertian and quartan form of malaria. As he says, the quotidian form may be due to a double tertian or a triple quartan. My experience suggests that the quotidians we have here are double tertians. During recent years I have used (*Boston Medical and Surgical Journal*, March 9, 1893, and November 15, 1894) Dock's method of giving quinine in treating malaria. In a few of two series of cases I have been obliged to give a second dose on the second day, as there was a rise of temperature on that day. All of these cases which had a second dose were quotidians; the first dose had probably acted upon one set of the tertian parasites and the second dose on the second set. After the second day all of the symptoms disappeared.

Malaria fevers in Baltimore, to the number of 616, have been carefully studied during recent years by Drs. Thayer and Hewetson, and the results of their labors have been most attractively presented in the work which they have just published.

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Clinical Department.

A CASE OF PANOPHTHALMITIS, WITH PERFORATION INTO THE ORBIT, AND SYMPTOMS SUGGESTING SEPTIC INFECTION.

BY FREDERICK E. CHENEY, M.D.,
Surgeon to the Massachusetts Charitable Eye and Ear Infirmary; Instructor in Ophthalmoscopy, Harvard Medical School.

THE case which I have to report is that of a young woman twenty-nine years of age, who was first seen January 26, 1894, in consultation with Dr. Charles F. Haynes of Brighton. The previous history, for which I am principally indebted to Dr. Haynes, is as follows: The eye trouble began in her fifteenth year, when the right eye became very much inflamed. It yielded readily to treatment, however, and gave no further trouble until three years later, when the inflammation is said to have been very severe, and she was under the care of an oculist for about one month. An operation was performed upon the eye: just what it was could not be ascertained. This second attack resulted in a complete loss of sight, and since then the eye has been frequently inflamed, it being especially irritable at her menstrual periods. She is of a decidedly neurotic temperament, and for a number of years has suffered from a mild form of rheumatism. On January 15, 1894, the eye became very red and painful; and although these symptoms rapidly increased in severity, she was not seen by a physician till about a week later.

At the time of my first visit, she was confined to the bed, and complained of such severe pain in and around the eye, that she was kept under the influence of opiates most of the time. An examination showed a typical case of panophthalmitis. The lids and surrounding tissue were greatly swollen and reddened, and the upper lid so much infiltrated, that it could not be raised with the fingers sufficiently to expose the upper third of the cornea. The eyeball appeared prominent, enlarged, and perfectly immovable. The ocular conjunctiva was swollen and injected, the iris greenish in color, and the pupil drawn upward. The left eye, with the exception of considerable photophobia and the slight injection of the conjunctival vessel, was perfectly normal. After two days poulticing, the lids became much less infiltrated, and the front of the eye could be exposed without difficulty. At the upper outer border of the cornea, there was a large grayish opacity, evidently the result of an old perforating ulcer, as there was an extensive incarceration of the iris. There was no bulging of the cornea in this region and no prominence of the sclera that suggested a possible point of spontaneous perforation. As the pain continued severe, an incision of the globe was thought advisable, and, under ether, a cut was made from the point of the old perforation, entirely across the cornea and extending backward into the vitreous. This operation was followed by the escape of a small amount of pus, not nearly as much, however, as was to have been expected. Poulticing was continued, and although the pain was decidedly less, and the patient felt much better generally, the discharge from the wound was slight, and there was no decrease in the size of the globe.

On the evening of January 31st, Dr. Haynes telephoned me that she had had a number of chills, with rise of temperature, loss of appetite, and some nausea. There was very little pain in the eye or head and she seemed cheerful and bright. The next morning these symptoms had not subsided, and septic infection being feared, enucleation was performed under ether. Nothing unusual occurred in the course of the operation until the superior rectus was divided, when there was an escape of a considerable quantity of thick yellowish pus and a moderate collapse of the globe. After the eye was removed, an irregular opening was found in the sclera just behind the insertion of the superior rectus, large enough to admit the tip of the little finger. The orbit was cleansed as thoroughly as possible, and irrigated with a 1–5,000 corrosive-sublimate solution for a number of days. The healing process was normal in every respect. The morning and evening temperature and pulse for the next five days were as follows:

	Temp.	Pulse.
Feb. 1 (day of operation) evening, . .	104°	118
2, morning, ...	102°	100
2, evening, ...	104°	138
3, morning, ...	101°	118
3, evening, ...	105.5°	136
4, morning, ...	102.5°	115
4, evening, ...	104°	130
5, morning, ...	100.5°	112

There was no marked rise of temperature or increase of pulse after this latter date, and the patient seemed to be doing well in every respect until three or four weeks later, when a fluctuating tumor developed in the region of the pancreas. This tumor, Dr. Haynes writes me, persisted for a number of weeks and with its gradual disappearance there developed one of the severest cases of dermatitis exfoliata that he had ever seen. Whether or no these later symptoms were in any way dependent upon the ocular trouble I am unable to say.

This case is of unusual interest, not only as an example of perforation into the orbit during panophthalmitis, which is an extremely rare event, but also from the fact, that the condition resulted in a general disturbance, strongly suggesting septic infection. The reason for perforation taking place where it did, is most easily accounted for, it seems to me, by supposing that the sclera over this area was weakened as a result of previous inflammation, and that there was consequently less resistance offered, than in the more anterior portions of the globe where perforations usually take place. Such thinnings of the sclera, though rarely so far from the corneal margin, are not infrequently seen in connection with old peripheral corneal processes, and it is well to consider the possibility of perforation into the orbit, in cases of panophthalmitis secondary to ulcers, near the corneal border.

It has not been my custom to enucleate while the eye was in an active state of suppuration, for the reason that there have been a considerable number of cases of purulent meningitis reported as a result of such a procedure, and it seems safer to wait until the inflammatory process has subsided. This danger, owing to our knowledge and more general practice of antisepsis, is probably very much less at the present time than in the past, and many surgeons now advise enucleation as soon as no doubt exists as to the case being one of panophthalmitis. In the case reported, there was no question as to the advisability of enucleation, and if the eye had been removed a few days earlier, it would probably have been better for the patient. The fact that the pus did not escape freely from the eye, after it had been incised, would certainly suggest that the perforation had taken place through the sclera at that time; that is, it was much easier for the pus to make its exit through the large irregular opening in the sclera, and infiltrate the orbital tissue, than it was to pass forward through the incised wound, whose edges were in good apposition.

Reports of Societies.

ANNUAL MEETING OF THE HARVARD MEDICAL ALUMNI ASSOCIATION.

THE Fifth Annual Meeting of the Harvard Medical Alumni Association was held at the Medical School Building, Boylston Street, at noon June 25, 1895, the President, Dr. GEORGE B. SHATTUCK, in the chair. About fifty members were present.

DR. WALTER ELA, the Treasurer, then read his report, showing a balance in the treasury of $1,886.82.

The election of officers resulted in the choice of Drs. F. G. Morrill of Boston, G. S. Osborne of Peabody and Homer Gage of Worcester, to be Councillors for the term of four years. Drs. G. J. Engelmann and Theobald Smith were made honorary members.

The constitution was amended so as to allow members who are not Councillors to serve on the Committee on the Harvard Medical School.

The following resolutions offered by DR. CHADWICK were unanimously adopted:

Resolved, That the Harvard Medical Alumni Association hereby petitions the Corporation and the Board of Overseers of Harvard College to allow the Alumni of the Medical School to share in the election for Overseers.

Resolved, That the Council of the Association be directed to make assiduous and persistent efforts to obtain this privilege.

Resolved, That the members of the Association who are also Alumni of the College be urged in the elections for Overseers to cast their votes for candidates favoring this extension of the franchise.

ANNUAL DINNER.

The Fifth Annual Dinner was at the Hotel Vendome at one o'clock, and there were present one hundred and sixty-seven members and five invited guests.

THE PRESIDENT'S ADDRESS.

DR. SHATTUCK reminded the members that the objects of the Association were defined in the constitution as the advancement of the cause of medical edution in general, the promotion of the interest and increase of the usefulness of the Harvard Medical School in particular, and the promotion of acquaintance and good fellowship among the members of the Association. He congratulated the Association on the progress during the past year and predicted a long life of increasing activity.

Two hundred and thirty new members have been enrolled since your last Annual Meeting; eight new life-members have been registered; and you have today added to your list two new honorary members. A new bulletin and a new catalogue have been published, and your publications are sought for in exchange by learned bodies at home and abroad.

Your treasury is overflowing in the sense that income is greater then outgo, and you are rich as is that individual whose expenditures are less then his receipts. Not only is the number of new members more than double what it was last year, but no less than twenty-one States are represented in this new membership, as well as foreign countries to the north and south of our own great republic. To the outsider the Harvard Medical School must stand for the Puritan foundation and the New England idea in its training, its methods and its products; and yet, I notice that among the new accessions to our Association the French invasion of this continent is represented by a practitioner in Quebec, a graduate of 1838; and the Spanish by a practitioner in the City of Mexico, a graduate of fifty years later.

The Association has, I regret to say, been deprived by death of two of its honorary members — Dr. Henry Willard Williams and Dr. George Tufton Moffatt. By the death of Dr. Williams we have lost one of our most distinguished members. He held for twenty-two years the Chair of Ophthalmology in the Harvard Medical School, and upon his retirement made handsome provision for its endowment. He was one of the originators of the Boston City Hospital, the creator and for twenty-six years the head of its Ophthalmological Department. He was President of the Massachusetts Medical Society; he was the promoter and one of the founders of the Massachusetts Medical Benevolent Society. He was a founder and President of the American Ophthalmological Society. To his skill and judgment as an ophthalmologist many among you can bear witness.

Among the names of deceased members you will mark those of Horace Kimball, a graduate of 1834; William Mack, of 1838; George James Townsend, of 1846; Frederick Augustus Sawyer, of 1856.

In speaking of the usefulness of the Association Dr. Shattuck said: Twice in its short life-time has this Association, represented by its Treasurer, rescued deserving graduates from that oblivion which envelops those unrecognized by the College and unheeded by the compiler of the quinquennial catalogue. I repeat, those who want to be successful in life and comfortable after death, must belong to the Association. Even a Bachelor of Science cannot die at the antipodes in Australia without this Association being instantly made aware of the sad event in order to transmit to the quinquennial catalogue the desired details.

Dr. Shattuck proceeded to introduce the speakers.

We are fortunate enough to have with us to-day the President of Harvard University. Unfortunately he can only be with us a short time. As President of a university, and not merely of a college, he is compelled to be ubiquitous. Our sister Association of the Law School which to-day celebrates the twenty-fifth anniversary of Professor Langdell's deanship, demands his presence; the Divinity School and Radcliffe College — which to-day holds its first commencement exercises as such — also make claims upon him. Under the circumstances your Committee on the Medical School, will, I am sure, forgive me if I postpone a little the reading of their report, and ask President Eliot immediately to say some words of encouragement to you. Perhaps the President will tell us what in his opinion the future has in store for the eager student who desires both a four years' academic and a four years' professional degree, but who is driven by the wholesome stimulus of prospective want.

PRESIDENT ELIOT.

Mr. President and Gentlemen.— The problem which your President has just put before me is certainly a very grave one. The average age of admission to Harvard College at this moment is fully nineteen. The student who stays there four years to get his A. B. is twenty-three when he graduates. He then goes to our Medical School to stay there four years; so he is twenty-seven years of age before he even has his medical degree, and we all know that some years intervene between that achievement and competency to support a family. Now that highly educated young man ought to have been married at twenty-five.

The remedies for this state of things — which is really intolerable, gentlemen, and which particularly ought not to exist in a country so new as ours — are somewhat complex. They, in the first place, must include an improvement in the secondary schools of the country, whereby the boys may learn a great deal more and yet come out of them earlier. The proper age for secondary education in our country is between thirteen and eighteen, not higher. Then I must frankly say that for years I have been in favor of reducing the ordinary term of residence for the degree of Bachelor of Arts to three years — an out and out square reduction from four to three years.

I know that what the average student at Harvard College does in four years can be well done in three, with good results to the students and no harm whatever to scholarship. There is no worse practice for a young man than to work easily half his time, or a third of his time for four years. He had a great deal better work hard for three years; with hard work he will acquire both more information and more power in three years than he will with easy work in four. The college course in our country should be more strenuous and shorter. Let the boy come out at the age of eighteen from his secondary school and out of college at twenty-one, and then there may be some prospect of his beginning to fulfil his highest duties to the community by the time he is twenty-five. But, gentlemen, this problem is an extremely difficult one, which needs to be worked out patiently by the teachers of secondary schools, the faculties of colleges, and all those interested in the welfare of educated society. And we must not look for an immediate solution.

I want to use the few moments which I can enjoy here in saying some things about the future of the Medical School which you love and whose prosperity you wish to promote. Next year we have before us a good year's work in developing and carrying out for the first time the fourth year's course of instruction.

That is enough work for the year. We shall make a substantial addition to the instruction heretofore given in our schools in putting into practice the plans laid down some time ago for the fourth year of the school. But, then, during that year we may expect to make plans for further development.

On what lines are those plans to run? It seems to me that the next thing for our Medical School to do — I would not urge this on all medical schools — that the next thing for our Medical School to do is to require for admission a first degree in arts, letters or science; that is, to enact that nobody shall be admissible to our Medical School unless he is already the possessor of a first degree in arts, letters or science. This measure would perhaps in some degree diminish at first, for a short time, the resort to the school, but should not be declined by us on that account. Indeed, that very consideration should stimulate us to undertake this honorable task, rather than deter us from it.

The American universities have long been peculiar in that their professional schools were wide open to any passer-by in the street, whereas the colleges were guarded by rigid examinations. This peculiarity may have been expedient during the elementary stages of the development of our educational system; but now after a hundred years or more, it becomes us to imitate the example of the universities in older countries, and our leading professional schools should no longer be open to persons of no academic training whatever.

In Harvard University it should not be the case that the admission of young men to the Medical School should be perhaps one-third as difficult as the examination for admission to Harvard College. The real University quality of our Medical School will not be developed till it consists entirely of men whose preliminary education has been adequate and thorough. All that is needed to carry out this measure successfully from the pecuniary point of view is a long-enough notice. Already for some years our Divinity School has admitted as regular students none but graduates in arts; and next year, the Law School enters on a similar policy. It gave notice several years ago that after June, 1896, no persons would be admitted to the Law School as regular students unless they already held degree in arts, literature, philosophy or science, or were qualified to enter the Senior Class at Harvard College. It is that policy which I urge upon the Medical School with adequate notice; and I should think the even year, 1900, rather a fortunate time to put this new policy into effect. Five years' notice would be enough to prevent any serious diminution in the numbers of the school, for it is long enough to enable any ambitious boy to meet the requirement — any ambitious boy who is looking forward to a medical career. That, then, would be the first new policy which I would urge upon the school, and which I would ask you, the graduates and friends of the school, to support as you supported the revolution in the school of 1870–71, a much more difficult revolution.

The second step which I desire to urge is a decided enlargement of the instruction. The limit of instruction in most American medical schools has been an amount which the average student could himself absorb during the required residence, say three years. The school taught nothing beyond. Anything outside of this was held to be superfluous, unnecessary and almost illegitimate, because not conducting to the degree taught by the ordinary practitioners. There was practically a prescribed curriculum. There is today the prescribed curriculum for our Medical School except for the fourth year. Now no department of the university can be adequately extended and improved under such a restriction as that, namely, that it shall teach no more than a fair student can learn in three years. I believe that the instruction now given at Harvard College, for example, is more than any good student could take in sixty consecutive years, if he devoted himself exclusively to following the courses of the college. That is, the amplitude of instruction bears no relation whatever to the capacity of absorption of a single student in four years. Just so it ought to be in a University Medical School. There should be an extended instruction far beyond the limits of any one student's capacity. This involves, of course, an optional or elective system within the school itself, whereby the individual student should take what is for him the best four years' work, the Faculty supplying an amount of teaching which it would take a single student eight, twelve or twenty years to pursue. We must escape at our Medical School from this limitation of instruction to a prescribed curriculum suitable for any one student who follows it four years.

There would go with this enlargement an expansion of investigatory work, of what may be called scientific medical work, or laboratory research; and an increase of the staff, so that the professors of the scientific subjects might have a staff capable in itself of extending medical investigation. The graduate department of the school would simultaneously increase.

And now a third thing our Medical School needs, and should have in the near future, is a hospital of its own, wholly under the direction of the teachers of the school. I should like to explain to you from the point of view of the President of the University one aspect of that need. Of course, we all realize that additional clinical facilities are desirable in any medical school, but that is not the point that I desire now to bring to your notice. At present, we breed in and in too much in our Medical School, and we are too closely restricted in selecting our teachers among the medical men of this particular community right about us. What determines that restriction? It is the common necessity of offering a medical teacher clinical opportunities. But the hospitals, dispensaries and asylums are managed by independent boards of trustees, and in selecting their staffs these trustees have not primarily in view the necessities of medical instruction, willing though they be to co-operate with the Faculty with the purpose of improving medical instruction. The members of the staffs of the hospitals, dispensaries and asylums are selected for other qualities than a capacity to teach; but when the President and Fellows of Harvard College wish to get a medical teacher from without this immediate community, they are hindered by the fact that they cannot themselves provide the gentlemen whose services they seek with clinical opportunities. If there were a hospital within the control of the university, this serious difficulty in the way of bringing admirable men from without to the service of the school would be greatly diminished, and it is from that point of view that I desire to see a hospital connected with out Medical School.

These three points, gentlemen, are the ones which I wish to-day to have an opportunity to bring to your attention: the expediency of prescribing a degree in arts, science or letters for admission; the desirableness of greatly extending the instruction of the school; and the need of a hospital within the control of the university. I ask your support for these measures so far as they may in time commend themselves to your judgment; and I take this opportunity of thanking you once more for the extraordinarily cordial and effective support which has been given to the Medical School by this Association, and indeed by the medical profession of Massachusetts during the rapid growth and expansion of our Medical Department since 1880. . . .

(*To be continued.*)

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ANNUAL REPORT OF THE MASSACHUSETTS GENERAL HOSPITAL.

THE Eighty-first Annual Report of the Massachusetts General Hospital and McLean Hospital has been published later than usual this year. In the introductory report, the trustees announce the completion of the George A. Gardner ward for contagious diseases. This ward supplies a long-felt want in the hospital, affording a suitable place for the care of accidental and unavoidable cases of contagious disease. The need of improved laboratory facilities has been urgent, and a sufficient sum has been raised by subscription to construct and in a measure endow a new laboratory.

An attempt is being made to check the abuse of gratuitous hospital facilities by patients whose ability to pay is undoubted, by charging ten cents for each visit in the surgical out-patient department and a sum equal to the cost for splints, crutches, and other apparatus, to be repaid on return of the articles in good condition. The most important part of the trustees' report is that devoted to a consideration of the subject of Free Beds. From this we extract the following:

"The question of the expediency of limiting the number of free beds at the General Hospital, depends mainly for its solution upon the financial ability to maintain them. No trustee would incline to entertain the thought of restricting their use in the case of the deserving poor, did our means admit of unlimited service.

"The General Hospital is provided with funds for the maintenance of only 72 free beds, whereas the average number of free patients for the last ten years has been 171. The cost of this difference has been annually paid by the hospital out of its own resources for current expenses, with the hope that the public would heed the annual appeal for contributions. These contributions have not, however, kept pace with the steadily and rapidly growing demand for free beds, and, on the other hand, the annual deficit of the General Hospital has been increasing every year. The deficit amounted in 1891 to $12,410, in 1892 to $17,474, in 1893 to $35,060, and in 1894 to $41,930.

"Moreover, the number of paying patients who contribute an amount equal to or in excess of the cost of their maintenance has steadily diminished — from 295 in 1888 to 144 in 1893, whereas the number of free patients has increased — from 150 in 1885 to 176 in 1894. The average cost per patient per week has increased from $11.99 in 1885 to $16.15 in 1894, and in the ten years just closed, the expenses of the General Hospital have exceeded its receipts by the sum of $195,599.38.

"By reason of all these, and other facts adduced, the trustees find themselves constrained, with a sense of deep regret, to curtail the usefulness of the General Hospital in the direction of free beds by limiting their number, except in cases of emergency, to 125."

From the report of the resident physician we learn that the total number of patients treated during the year was 3,406; of these, 2,683 were free; 621 paid; 102 paid part of the time. Proportion of deaths to whole number of results, 9.04 per cent. Number of patients received on account of accidents, 566. The proportion of ward beds occupied by free patients was 80 per cent.; by paying patients, 20 per cent. About 9.95 per cent. of the paying patients occupied private rooms. The average number of patients was 213; males, 121; females, 92. The average number of paying patients was 37; Americans, 24; foreigners, 13. The average number of free patients was 176; Americans, 80; foreigners, 96. The average time of paying patients was 3.09 weeks; and that of free patients, 3.41 weeks.

For the first time in these reports we notice tables of medical and surgical statistics in addition to tables concerning finances and supplies. The preponderant devotion of this hospital to surgery is again indicated by such tables — those given to medical diseases occupying only 12 pages, whilst those detailing surgical diseases take 83 pages.

It is expected that the new buildings for the McLean Hospital at Waverly will be ready for occupancy in the summer or autumn of 1895. In regard to the approaching move from Somerville where the McLean Hospital has been so long, Dr. Edward Cowles, the superintendent, says:

> "It is due to the greatness of the change, from the old to the new, that the preparations become somewhat formidable. But as some of these were begun long ago, and the major part of them are now well underway, or provided for, it is expected that all will come into effective coöperation at the right time. . . .
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> "It is with no spirit of permitting injustice to the good in the old, that the promises of the new hospital are allowed to fill our thoughts. The hospital home in the old Barrell mansion with its reminders of Bulfinch's architectural skill, and in the houses that have been built up around it, has its precious memories of those who lived and labored here, and those who suffered and were comforted in it. In the seventy-eight years since its foundation as the third hospital of its kind in America, it has known the presence of Wyman, Lee, Bell, Booth and Tyler, who are no longer living. It was Bell whose tribute to Wyman bore testimony to his profound influence, in that formative period, in moulding the ideas of the American alienists upon the highest conceptions of the humane and rational treatment of the insane. It was Tyler whose fitting eulogy of Bell placed him high among the leaders in his guild. Tyler, the last of the line to go over to the majority – to know him was to love him. It is an honor to be simply a successor, to remember and to name them all, in grateful memory, as we pass out of the place where their noble work was done. And there was a host of other faithful laborers whose work these results have crowned.
>
> "In the near breaking up of the home that has meant so much to the many who have dwelt in it, our unbidden thoughts of them obscure even the promises of the new scene of our hopes and interests. When we would turn away regretfully from these old associations, they follow us with the thought that the task is great to live up to the spirit of the past, and to work out its worthy succession.
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> "It is a time to think reverently of those who have gone before and of what they have wrought; and it is a time to speak out the fulness of our gratitude for every friendly and helpful word and act that has aided the doing of all that has been done here."

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MICROBE FERMENTS OF THE SOIL.

IT is known that there are useful as well as baneful microbes, and that all the putrid decompositions, as well as many reconstructive processes in nature, are carried on under the influence of bacteria. A writer in the *Revue des Deux Mondes*[1] has called our attention to a new useful function of certain microbes of the soil, namely, that of fixing atmospheric nitrogen in a way in which it can be utilized by plants.

It has long been known that the vegetable kingdom in the main obtains its carbon compounds from the air through the chlorophyll of green leaves, and its nitrogen from ammonia and nitrates in the soil. Soils poor in nitrates are known to produce weakly plants.

That this is true of barley, wheat, oats, rye and other cereals was long ago established by Boussingault and other chemists, by sowing these grains in soils devoid of nitrogen-compounds. Afterwards the surprising discovery was made by Hellriegel, Wilfarth and George Ville that the members of the Leguminosæ family (peas, beans, vetch, etc.) were able, in some way, to obtain nitrogen from the air, even acquiring a normal and sometimes exuberant development in soils entirely deprived of combined nitrogen. No explanation of this singular fact was possible till certain botanists, and notably Prilleux, proved the agency of the microbes of the soil in the fixation of nitrogen. It was observed that the roots of leguminous plants were covered with little nodosities, tubercles of pinhead size; if one of these little warty growths was crushed on a microscope-slide and examined with a high power, innumerable elongated, often bifurcated, corpuscles, almost motionless, were detected, which were bacteria. By careful observations it was discovered that it was to the presence of these bacteria that the healthy growth of the plants was due; if sown on sterilized soil, they speedily perished, or at least failed to take on vigorous development. It was also noticed that the peas, lupines, etc., would flourish in soil that had been sterilized provided that they were watered with a maceration of earth, containing living microbes from good arable land.

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[1] Tome cxvii, p. 132.

It would then seem that it was to the presence of these nodosities, and to the existence there of the microbes inhabiting them that was due the ability of the plant to live and thrive in a soil completely deprived of nitrogen compounds. The micro-organisms seem, then, to have been instrumental in the fixation of nitrogen by the plants.

This intervention seems, moreover, to have been demonstrated by an experiment performed by Bréal at the Laboratory of Vegetal Physiology of the Museum of Natural History. Instead of causing the appearance of the nodosities on the roots of the leguminosæ by sprinkling them with the maceration of earth, he pricked with a needle one of the nodules on a healthy plant and "vaccinated" with it the root of a germinating lupine; the young lupine was then planted in sterilized soil along with another embryonal plant whose root had not been vaccinated. The experiment was very startling. While the lupine that had been pricked grew, thrived and produced healthy pods and seeds, and while its roots were covered with nodosities teeming with bacteria, the lupine which was not pricked was very soon blighted in its growth. In the vaccinated lupine the nitrogen much exceeded that contained in the seed from which it came; in the blighted plant only the nitrogen contained in the seed was found.

The plant had been "vaccinated," and the introduction into tissues of the root of bacteria productive of the nodosities really determined their appearance and made the plant vigorous and able somehow to obtain the nitrogen it needed.

The explanation presented of this singular phenomena is as follows: "The tubercles of the roots are productions caused by the action of bacteria, thus resembling nutgalls on oak trees. The bacteria find in the juices of the root their proper pabulum and multiply indefinitely, after the death of the plant becoming diffused in the soil. The leguminous plant profits by the presence of the bacteria in this way: In the part of the nodosity nearest the root appear numerous septa which keep the bacteria prisoners. After a time these prisoners perish, their tissues are dissolved and are utilized by the plant. At the youngest part of the nodosity appear constantly new cells containing starch which becomes soluble and furnishes to the bacteria the carbon compounds essential to their development. The plant thus prepares for itself new food-substances; when the bacteria have appropriated the atmospheric nitrogen and formed in their own tissues azotized materials, the latter are absorbed by the plant and carried by its vessels to all parts of its structure. The anatomical constitution of the tubercle is thus admirably adapted to the conditions of this common life."

Finally, an admirable and very complicated experiment by Schloesing *fils* and Laurent has shown that the nitrogen utilized by the growing leguminous plants under these conditions really comes from the surrounding air — hypothetically by the intervention of microbes, as above indicated. For the details of this experiment we must refer the reader to the magazine article above cited.

If these facts may be regarded as substantiated, we have at last a definite solution of what has long been a vexed question in biological science and we may consider as established the fixation of atmospheric nitrogen by microbic action.

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MEDICAL NOTES.

Birth-rate in Paris.— The number of births in Paris from July 7th to 13th was 1,070, of which 289 were illegitimate.

St. Thomas's Hospital. — The Corporation of the City of London has granted a donation of two hundred guineas to the special fund for the closed wards of this hospital.

The Late Professor Traube of Berlin.— A bust of Ludwig Traube, the eminent Berlin clinician, who died nineteen years ago, has been placed in the garden of the Charité Hospital, Berlin.

Cholera in Japan.— Cholera continues to spread in Japan. Returns now show that 27 places are infected. Up to the 7th of July the total number of cases had been 7,305, of which 4,376 had proved fatal.

Deaths of Eminent Foreign Medical Men. — The deaths of the following eminent foreign medical men are announced: "Dr. Elias Rodriguez, Professor of Therapeutics and Forensic Medicine in Carácas; and Dr. José Maria Teixeira, Professor of Pharmacology and Therapeutics in the University of Rio de Janeiro.

More Anti-vivisection Logic.— The Electoral Anti-Vivisection League of England, issues the following as a leaflet: "Vote for no one who will not promise to insist on the total prohibition of vivisection — that means, experimenting on living animals — which always leads to experimenting on patients in hospitals."

Physicians in Civilized and Uncivilized Countries. — An interesting comparison has been made between the number of physicians practising in civilized and uncivilized countries. Thus New York City has 3,500 physicians for her 2,000,000. China has twelve hospitals, and twenty-five physicians for 400,000,000.

Foreign University Intelligence. — Bonn: Professor Miculicz of Breslau, who was invited to succeed Professor Trendelenburg in the Chair of Surgery, having declined to migrate, the post has been offered to Dr. Schede, director of the surgical side of the Eppendorf General Hospital, Hamburg. Tubingen: Dr. Henke, Professor of Anatomy and Director of the Anatomical Institute, is retiring. Professor

Curtius of Kiel has been appointed to the Chair of Chemistry, in succession to Dr. Lothar von Meyer.

A LIBERAL BEQUEST.— The Emperor of Germany announces that he will contribute 10,000 marks toward the erection of a statue in Berlin to Helmholz's memory. This is the first contribution by royalty or any distinguished functionary of State to commemorate the achievement of either doctor or scientist, so far as our memory serves us.— *Exchange.*

MODERN MEDICINE IN JAPAN.— Japan possesses one of the most brilliant and original of scientific medical investigators in Dr. Kitasato, whose services to the world at Berlin in connection with diphtheria and tetanus, and at Hong Kong with the plague, are too well known to need our eulogy. Dr. Kitasato is reported to have recently carried out the antitoxin treatment in thirty-four cases of diphtheria, with thirty-one recoveries. He is now engaged in the study of leprosy, with so far most satisfactory results. The Japanese government has voted a sum of money for the use of the laboratory of which he is in charge.

AN ARISTOCRATIC BABY SHOW.— At an aristocratic baby show, recently held in England at the house of Mrs. Robert Crawshay, the first prize for weight and general excellence for babies under one year of age was awarded to Dermot Browne, son of Lord and Lady Castlerosse, who, though but eleven months old weighed thirty-three and one-half pounds. The prize for weight and general excellence of development for babies over one year of age was awarded to Angela Mildred Baring, daughter of Lord and Lady Ashburton, who was eighteen months old, weighed twenty-eight pounds, and had fourteen teeth. Information as to the feeding of these children would have been interesting, as the *British Medical Journal* remarks; and we hope that in future instances of this kind full details of the management which succeeds in producing such noteworthy results will be published.

QUACKERY IN INDIA.— The *Lancet* states that the number of quack doctors in India has, of late, increased at an alarming rate. Formerly the species was unknown save in the larger towns, but nowadays the creature is to be met with everywhere, making money chiefly by the sale of medicine, but also extracting fees whenever he can induce his patients to disburse. Mr. Carstairs characterizes the Bengal quack as a "reproach and a hindrance to English medicine," and states that in one village of about two thousand inhabitants with which he is acquainted, there are no fewer than sixteen of these irregular practitioners.

NEW YORK.

APPOINTMENT. — Dr. George B. Fowler, who was recently made Health Commissioner in the place of Dr. Cyrus Edson, resigned, has been appointed a member of the State Board of Health, from which Dr. Edson also resigned.

THE NEW YORK BOTANICAL GARDENS. — The Commissioners of Parks have decided upon Bronx Park as the site of the New York Botanical Gardens, and have called upon the Board of Estimate and Apportionment for the $500,000 which was provided for in the act of incorporation as soon as $250,000 should be secured by voluntary subscriptions. The management of the gardens is to be in the hands of a board composed of the President of Columbia College and its professors of botany, geology and chemistry, the President of the Torrey Botanical Club, the Mayor of New York City, the President of the Board of Education, the President of the Park Commission, and nine other members to be selected by the board.

GLANDERS IN BROOKLYN. — On account of the presence of a number of cases of glanders in Brooklyn, the Board of Health of that city at a meeting held July 27th, determined, at the suggestion of Dr. W. H. Wright, a veterinary surgeon, to temporarily shut off the water in the public drinking-troughs.

THE SURGEONS OF NEW JERSEY. — The military order of surgeons of New Jersey held their annual banquet at the club-house in the State Camp Grounds at Sea Girt on Wednesday, July 31st.

DEATH OF DR. JARVIS. — Dr. William C. Jarvis, the well-known specialist in diseases of the throat and nose, died, after a short illness, at the residence of his brother, Capt. N. S. Jarvis, post-surgeon at Willets Point, Long Island, on July 30th. Dr. Jarvis was a little over forty years old and a son of the late Dr. N. S. Jarvis, a surgeon in the United States Army. He was graduated from the Medical Department of the University of the City of New York. He early won distinction in his chosen specialty, and a number of years ago was appointed Clinical Professor of Laryngology and Rhinology in his alma mater. He was for many years a prominent member of the American Laryngological Society, and was a prolific contributor to medical literature. He possessed unusual inventive and mechanical aptitude, and devised many instruments and appliances which have proved of permanent value. Dr. Jarvis also had many fine social qualities, which endeared him to a large circle of friends, and his untimely death will be deeply regretted on account of these, no less than of his brilliant scientific attainments.

MORTALITY OF NEW YORK CITY. — The number of deaths reported in the city during the week ending August 3d was 893, a decrease of 49 from the preceding week. This represents an annual death-rate of 24.97 per thousand of the estimated population and it is unusually low for this period of the summer when the highest mortality of the entire year is almost invariably recorded. This favorable showing is, no doubt, due to the unusually cool weather, for the season. that has prevailed. There were but 181 deaths from diarrheal diseases, but of these no less than 163 were in children under five years of age, and of the whole 893 deaths, 492 were in children under five. Of the zymotic diseases diphtheria still continues the most prevalent, and 29 deaths were reported from it.

There was but a single death from scarlet fever, the smallest mortality from this disease reported for a long time.

◆

Miscellany.

THE NEEDS AND SHORTCOMINGS OF WOMEN PHYSICIANS.

Dr. Mary Putnam Jacobi, of New York, has recently expressed her ideas as to medical women as follows. To any one at all conversant with the facts her estimate must appeal as altogether just. Certainly few women are better able to judge of such a matter than she, herself so striking an exception to the deficiencies she characterizes:

"In woman, we find, on the whole, a less quantum of force, or surplus of vitality, over and above the needs of individual nutrition. This relative defect must be compensated by greater precision of technical training in order to diminish the friction of the mental working machine, — an instrument of precision may, under favorable circumstances, turn out work which is equivalent in value to that effected by sledge hammers. This need of strenuous drill and discipline — a sort of West Point system — is not recognized in the medical education of women at all at present. In fact, it is only just beginning to be accepted that a college education is a desirable preliminary to plunging into the extraordinary difficulties of medical study. It is still generally supposed that to offer a curriculum to be traversed is all that is necessary; whereas the real need is of practical exercises of considerable variety and severity in order to train faculty and develop new brain force where inherited and traditional basis for exact work was lacking. The absence of this and of great medical teachers in America — at all events, who are accessible to women — go far to explain the mediocre results so far achieved."

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ON THE IMMUNIZING AND CURATIVE EFFECT OF ANTITOXIC BLOOD-SERUM OF THE SHEEP IN TYPHOID INTOXICATION.

Peifer, of Greifswald, spoke on this subject at the German Congress of Internal Medicine. In conjunction with Beumer he had performed experiments on the immunizing effect of the blood-serum from sheep who had been treated for three months with sterilized cultures of the typhoid bacillus. Earlier experiments had shown these investigators that the toxine of typhoid cultures was contained in the bodies of the bacilli themselves. Cultures which had been passed through the Chamberland filter were shown to be less toxic than before filtration. The sterilization of the virulent cultures without affecting their toxic properties was obtained by keeping them for one hour at a temperature of 55–60° C.

The work of Behring and his collaborators on diphtheria and tetanus had led the writers to approach the question as to whether small amounts of virulent cultures of the typhoid bacillus produced in the blood of animals antitoxic substances which inhibited the toxic effect of repeated injections of the cultures. In numerous experiments on guinea-pigs this question was answered in the affirmative.

The effect of the antitoxic serum depended not in a power to destroy the bacteria, but to neutralize the toxines. Experiments with large animals (sheep) showed that it was possible by previous or simultaneous injections of antitoxic serum to immunize guinea-pigs and mice against three times the fatal dose of the cultures. The writers also, on the ground of their observations, arrived at the conclusion that animals already suffering severely from the toxic effect of the cultures two to four hours after the administration of a fatal dose, could be cured by the injection of the antitoxic serum.

◆

INTERNATIONAL CONFERENCE REGARDING THE SANITARY ADMINISTRATION OF RAILWAYS AND NAVIGATION.

The Conference will meet at Amsterdam the 20th and 21st of September, 1895. The object of the meeting, in general, is to consider the methods adopted by various countries to insure the interests of travellers both by land and sea. To this end it has been thought wise to unite at a congress members of the medical profession who are especially interested in matters pertaining to sanitation in travel.

The work of the Conference is to be divided into three sections, as follows:

I Guarantees of the capacity of officials.
II. Organization of the medical service.
III. Hygienic interests of employees and travellers.

In view of the international importance of many questions on the programme, the committee has invited delegates to be present from various countries and from railway and navigation corporations. Papers will be presented either in French, German or English.

The president of the Conference is to be Prof. H. Snellen, of the University of Utrecht, one of the foremost ophthalmologists of Europe. Dr. B. Joy Jeffries, whose admirable work on color-blindness is universally recognized, has been invited to represent America. All communications should be made to the Secretary, Dr. Pijnappel, Stadhouderskade, 60, Amsterdam.

◆

DIPHTHERIA EPIDEMIC AT ASHTABULA.

Dr. F. D. Case, in the *Medical and Surgical Reporter* for July 13th, speaks of the epidemic as having peculiar interest from the fact that it is one of the few well-authenticated instances of an extensive epidemic due to infected milk; and, secondly, that it was the first epidemic in this country in which a general use was made of antitoxin.

All the cases up to December 10th were in families that procured milk from a certain milk-wagon. An inspection of the dairy showed the cows to be in good condition. On December 12th the health-officer reported that there were 49 cases of diphtheria, 45 of which were in families who used this particular milkman's milk. The report goes on to say that at no time were the bacilli of diphtheria found either in the suspected milk or in cultures taken from the throat of the milkman delivering the milk, who was at the time suffering from some sort of a sore throat. In spite of this fact, the circumstantial evidence was so strong, that the writer feels altogether justified in his conclusion that the milk was the source of infection.

The results of antitoxin treatment were, on the whole, satisfactory. The most frequent sequelæ in cases not treated with antitoxin were paralytic in character, another argument in favor of the now well-recognized toxemic origin of the various paralyses.

Hemiplegia, accompanied by aphasia, occurred in the case of one patient, a woman of eighteen. This complication, implying a central nerve lesion, must be regarded as extremely unusual, as shown by a careful study recently made by Dr. John J. Thomas, of Boston.

The serum employed was procured from the Pasteur Institute in New York.

◆

THE HARVARD SUMMER SCHOOL OF PHYSICAL TRAINING.

The school of physical training at Cambridge, under the direction of Dr. Dudley A. Sargent, has just closed the most successful session in its history. There have been in all ninety students, the greater number being women. At the close of the course a public exhibition was given in the Hemenway Gymnasium. The work which Dr. Sargent has done so much to advance in this country must lead to an ultimate physical improvement in those directly engaged in it, and so indirectly to constantly increasing numbers in the community at large. It should especially claim the support and encouragement of the medical profession.

◆

Correspondence.

ANOTHER WORD CONCERNING VIVISECTION.

Cambridge, August 3, 1895.

Mr. Editor: — A short time since, Professor Mosso of the University of Turin, sent me a manuscript copy of the tribute to Ludwig from which, copying from the *London Lancet*, you have given a brief quotation. One line of it has very greatly puzzled me. "It is an error," says Professor Mosso in the manuscript before me, "it is an error to think that one can experiment on animals that have not lost sensation," a statement which the *Lancet* refers to as "wisely" made. I have quoted from the author's manuscript. The *Lancet* translation says, "It is an error to believe that experiments can be performed on an animal which feels."

Upon the "wisdom" of making such a statement, I forbear comment, but *is it true?* Is it an example of that scientific accuracy which laboratory work tends to inculcate? In the *Archives Italiennes de Biologie*, Vol. VII, page 312, etc., may be found experiments of a certain Professor Mosso, in which he speaks of the "pain which the animals must have suffered as they struggled against the impetus which was carrying them against their will," and one of these experiments lasted for several hours. In the same collection of researches (Vol. XIII, page 478), a Professor Mosso records that "all the animals uttered cries during the last hours of their lives as if they were suffering intense pain." But it is needless to refer to anything but personal experience. Anybody with the least acquaintance with research in physiology or pathology knows that this statement is not true. One *can* experiment "on an animal which feels." I have done it myself.

All exaggeration is deplorable. I doubt if we shall ever convince anti-vivisectionists of their errors by evasions or misstatements. The true interests of science will never be advanced by anything but the exact truth.

Albert Leffingwell, M.D.

METEOROLOGICAL RECORD,

For the week ending July 27th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..21	29.93	74	82	67	79	73	76	N.	W.	4	6	F.	F.	
M..22	29.89	76	83	69	82	81	82	N.	S.E.	7	6	O.	O.	.17
T..23	29.95	76	82	69	66	61	64	N.W.	N.W.	14	6	O.	C.	
W..24	29.98	72	82	62	46	58	52	N.W.	S.W.	7	10	C.	O.	
T..25	29.78	73	81	65	59	83	71	W.	S.W.	7	10	C.	O.	
F..26	29.86	71	80	62	62	58	60	N.W.	W.	10	8	C.	C.	
S..27	29.91	70	79	61	48	81	64	S.W.	S.	2	15	O.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 27, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Whooping-cough.
New York . .	1,956,000	1042	604	34.40	9.50	26.80	2.20	1.60
Chicago . . .	1,600,000	—	—	—	—	—	—	—
Philadelphia .	1,139,457	593	318	31.28	7.82	24.31	4.25	.51
Brooklyn . .	1,043,000	583	350	39.78	7.82	31.96	1.70	1.70
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	197	94	29.58	8.16	22.95	4.59	—
Baltimore . .	500,000	—	—	—	—	—	—	—
Cincinnati . .	325,000	—	—	—	—	—	—	—
Cleveland . .	325,000	110	—	44.59	4.55	43.68	.91	.91
Washington .	285,000	—	—	—	—	—	—	—
Pittsburg . .	272,000	129	74	31.57	3.85	26.95	.77	.77
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	—	—	—	—	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	57	30	40.25	5.00	36.75	—	1.75
Fall River . .	92,233	72	51	64.21	2.78	29.19	51.43	—
Lowell . . .	90,613	64	35	42.12	4.68	36.14	1.56	—
Cambridge . .	79,607	31	17	38.76	3.23	25.84	6.45	—
Lynn	65,123	24	8	8.32	20.80	8.32	—	—
Springfield . .	50,284	13	6	46.14	7.69	46.14	—	—
Lawrence . .	49,900	24	16	41.70	4.17	41.70	—	—
New Bedford .	47,741	30	21	53.28	3.33	50.00	—	—
Holyoke . . .	43,848	—	—	—	—	—	—	—
Brockton . .	33,939	9	1	11.11	55.55	11.11	—	—
Salem	33,155	14	7	42.84	—	35.70	—	—
Haverhill . .	32,925	10	8	40.00	20.00	40.00	—	—
Malden . . .	30,209	10	3	20.00	20.00	20.00	—	—
Chelsea . . .	29,806	8	4	—	25.00	—	—	—
Fitchburg . .	29,383	—	—	—	—	—	—	—
Newton . . .	28,837	13	6	—	7.69	—	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,954	12	4	16.66	—	—	—	—
Waltham . .	22,058	5	2	20.00	20.00	20.00	—	—
Quincy . . .	19,642	4	2	25.00	25.00	—	—	—
Pittsfield . .	18,802	2	0	50.00	—	—	—	—
Everett . . .	16,585	3	3	33.33	—	—	—	—
Northampton .	16,331	5	1	40.00	20.00	40.00	—	—
Newburyport .	14,073	—	—	—	—	—	—	—
Amesbury . .	10,920	3	1	—	—	—	—	—

Deaths reported 3,119; under five years of age 1,678; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 889, consumption 252, acute lung diseases 143, diarrheal diseases 889, diphtheria and croup 83, whooping-cough 30, typhoid fever 28, measles 27, scarlet fever 13, malarial fever 8, cerebro-spinal meningitis 6, erysipelas 3.

From typhoid fever New York and Philadelphia 7 each, Brooklyn 5, Boston and Fall River 2 each, Pittsburgh, Nashville, Worcester, Quincy and Pittsfield 1 each. From measles New York 18, Philadelphia, Brooklyn and Pittsburgh 3 each. From scarlet fever New York 5, Philadelphia 3, Boston 2, Brooklyn, Cambridge and Salem 1 each. From malarial fever Brooklyn 4, New York, Nashville, New Bedford and Everett 1 each. From cerebro-spinal meningitis New York 5, Taunton 1. From erysipelas New York 2, Cambridge 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending July 20th, the death-rate was 21.9. Deaths reported 4,446; acute lung diseases (London) 193, diarrhea 798, measles 138, whooping-cough 72, diphtheria 67, scarlet fever 39, fever 23.

The death-rates ranged from 10.5 in Brighton to 30.3 in Liverpool; Birmingham 17.7, Bradford 22.1, Croydon 10.9, Halifax 11.7, Hull 20.5, Leeds 26.2, London 23.7, Manchester 23.7, Newcastle-on-Tyne 19.6, Nottingham 15.0, Oldham 16.3, Portsmouth 14.0, Sheffield 24.8, Swansea 12.4, West Ham 22.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 27, 1895, TO AUGUST 2, 1895.

The leave of absence for seven days granted MAJOR C. K. WINNE, surgeon, U. S. A., is hereby extended twenty-three days.

CAPTAIN W. FITZHUGH CARTER, assistant surgeon, U. S. A., granted leave of absence for one month.

Leave of absence for one month, with permission to apply for an extension of one month, is hereby granted to CAPTAIN JUNIUS L. POWELL, assistant surgeon, U. S. A.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING JULY 31, 1895.

HUTTON, W. H. H., surgeon. To proceed from Washington, D. C., to Pensacola, Fla., on special duty. July 18, 1895.

HAMILTON, J. B., surgeon. Granted leave of absence for three days. July 30, 1895.

WHEELER, W. A., surgeon. Detailed as chairman, Board for physical examination of candidates, Revenue Cutter Service. July 23, 1895.

CARMICHAEL, D. A., passed assistant surgeon. Detailed to make physical examination of candidates, Revenue Cutter Service. July 26, 1895.

WILLIAMS, L. L., passed assistant surgeon. Granted leave of absence for ten days. July 20, 1895.

MAGRUDER, G. M., passed assistant surgeon. To proceed from Galveston, Texas, to New Orleans, La., for temporary duty. July 27, 1895. Order to proceed to New Orleans suspended and directed to proceed to Eagle Pass, Texas, for special duty. July 31, 1895.

PERRY, J. C., passed assistant surgeon. Granted leave of absence for twenty days. July 16, 1895.

SPRAGUE, E. H., assistant surgeon. To proceed from Mobile, Ala., to Key West, Fla., for temporary duty, upon completion of which to rejoin station at Mobile. July 18, 1895.

THOMAS, A. R., assistant surgeon. To proceed from Buffalo, N. Y., to New Orleans, La., for temporary duty. July 20, 1895.

CUMMINGS, H. S., assistant surgeon. Detailed as recorder, Board for physical examination of candidate, Revenue Cutter Service. July 23, 1895.

GREENE, J. B., assistant surgeon. To report at Bureau for temporary duty. July 16, 1895.

BOOKS AND PAMPHLETS RECEIVED.

Treatment of Asiatic Cholera. By Elmer Lee, A.M., M.D., Ph.B., Chicago. Reprint. 1895.

Leprosy in New South Wales. (Report for 1894 in administration of the Leprosy Act) with Appendix.

Medical Terminology; Its Etymology and Errors. By P. J. McCourt, M.D., New York. Reprint. 1895.

Fifteenth Annual Announcement of the School of Medicine of the University of Denver, Session of 1895-96. Denver, Col. 1895.

Fifty-fifth Annual Announcement of the Missouri Medical College, Session 1895-96, and Catalogue of Session 1894-95. St. Louis, Mo.

Diphtheria; Its Bacterial Diagnosis and Treatment with the Antitoxin. By Henry W. Bettmann, M.D., of Cincinnati, Ohio. Reprint. 1895.

De la Symphyséotomie a la Clinique Baudelocque Pendant l'Année 1894. Par le Dr. A. Pinard. G. Steinheil, editeur. Reprint. 1895.

Careless and Unscientific Midwifery, with Special Reference to some Features of the Work of Midwives. By W. S. Smith, M.D. Reprint. 1895.

Report of Two Interesting Cases: Word-Blindness; Localized Muscular Spasms Illustrating Cerebral Localization. By J. M. Keniston, M.D. Reprint. 1895.

Some Points in the Technique of Kidney Operations. Phelps' Operation for Club-Foot. By Charles S. Briggs, A.M., M.D., Nashville, Tenn. Reprints. 1895.

Report of Cases of Brain Lesions: Abscesses, Meningitis and Sinus Thrombosis; Resulting from Disease of the Middle Ear. By J. T. Eskridge, M.D., Denver, Col. Reprint. 1895.

Chronic Tuberculosis; A Study of Four Cases. A Clinical Lecture delivered at the Medical Department of the University of Denver, Col. By E. R. Axtell, M.D. Reprint. 1895.

A Second Attack of Papillitis Occurring in a Case of Post-Neuritic Atrophy of the Optic Nerves. By G. E. de Schweinitz, M.D., and A. G. Thomson, M.D., of Philadelphia. Reprint. 1895.

Circular on the Care and Disposition of Persons Found Unconscious on the Streets or Elsewhere. Prepared by a Special Committee of the Medical Society of the County of Kings, N. Y. Reprint. 1895.

Case of Double Pyosalpinx, Removal of Both Tubes and Ovaries without Rupture of the Sacs, Recovery. A Successful Case of Porro-Cæsarean Section (Modified). By Hunter Robb, M.D. Reprints. 1895.

Traumatic Cyst of the Brain from an Injury received Twenty-five Years Before. Epilepsy; Operation; Recovery. By J. T. Eskridge, M.D., Denver, Col., and F. F. McNaught, M.D., Denver, Col. Reprint. 1895.

Burns of the Cornea: Electric-Light Explosion causing Temporary Blindness; Traumatic Injuries to Eyes; Hypopyon. Evisceration of the Eyeball. By L. Webster Fox, M.D., Philadelphia. Reprints. 1895.

Exercise and Food for Pulmonary Invalids. By Charles Denison, A.M., M.D., Denver, Col., Professor of Diseases of the Chest and of Climatology, University of Denver, etc. Denver: The Chain and Hardy Co. 1895.

Twenty-seventh Annual Report Relating to the Registry and Return of Births, Marriages and Deaths in Michigan for the year 1893, by the Secretary of State of Michigan by authority. Lansing: Printed by the State. 1895.

Vierter Bericht über das unter dem Allerhöchsten Protectorat Ihrer Majestät der Kaiserin Friedrich stehende Kaiser und Kaiserin Friedrich-Kinder-Krankenhaus in Berlin. Für die Zeit vom 1. Januar bis 31. December 1894. Berlin, 1895.

Report of One Hundred and Forty-five Operations done for the Removal of Ovarian Tumors and Pathological Conditions Associated with the Ovaries and Uterine Appendages Only. By A. Vander Veer, M.D., Albany, N. Y. Reprint. 1895.

Association of the Alumni of the Albany Medical College, Medical Department, Union University. Proceedings of the Twenty-second Annual Meeting, held April 16, 1895, Dr. Theobold Smith's Lecture, Commencement Exercises and Alumni Dinner.

The Cell; Outlines of General Anatomy and Physiology. By Dr. Oscar Hertwig, translated by M. Campbell, and edited by Henry Johnstone Campbell, M.D. With 168 illustrations. London: Swan, Sonnenschein & Co. New York: Macmillan & Co. 1895.

Twentieth Century Practice; An International Encyclopedia of Modern Medical Science by leading authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In twenty volumes. Vol. III: Occupation, Diseases, Drug Habits and Poisons. New York: William Wood & Co. 1895.

Suggestions for a Portable Instrument-Bag; Operating Overalls; A Bandage for Suprapubic Dressings; A Blanket for Protection of Patients during Operations; A Table for the Trendelenburg Posture; The Sterilization of Sponges; An Antiseptic Soap Paste. By Aug. Schachner, M.D., of Louisville. Reprint. 1895.

Prof. Francesco Durante, Direttore Della Clinica Chirurgica Della R. Università di Roma. Trattato di Patologia e Terapia Chirurgica, Generale e Speciale. Opera illustrata da circa 500 figure originali intercalate nel testo e da tavole litografiche. Volume I. Puntata 1 (pag. 1 a 208) con tavola. Lire 5. Reprint. Roma, 1895.

The History of Prostitution; Its Extent, Causes and Effects throughout the World. By William W. Sanger, M.D., Resident Physician, Blackwell's Island, New York City; Member of the American Association for the Advancement of Science, etc. With numerous editorial notes and an Appendix. New York: American Medical Press. 1895.

The Medical Profession and the State; The Alumni Oration, by Hon. Mariott Brosius, Lancaster, Pa. Delivered in the Amphitheatre of the Medico-Chirurgical College of Philadelphia, Thursday, May 9, 1895, Alumni Banquet of Medico-Chirurgical College. Given by the Alumni Association of the Medico-Chirurgical College of Philadelphia at the Hotel Metropole, Thursday, May 9, 1895.

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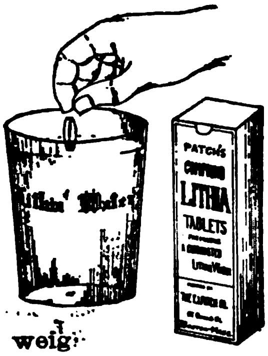

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Columbian University...................... ...
Crittenton, C. N............Hydroleine, etc. 6, 13
Cutter, Dr. W. P...............................
Dartmouth College, N. H....Med. Department
Douglass, Dr. DeF ....Artificial Limbs
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Feeble-Minded Youth, Inst. for..Barre, Mass.
Fisk & Arnold........................Artificial Limbs
Flood, Dr. Everett..............................
Fougera, E. & Co..........Imp'g Pharmacists 8, 9,
Gear, J. Frank...............Surgical Instruments
Goldthwaite, Dr. S. V..........................
Gould's Medical Dictionary.....................
Graham, Dr. Douglas......Treatise on Massage
Greene, Dr. E. M.........Examinations of Sputa
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PAGE

ORIGINAL ARTICLES.

THE TREATMENT OF ENLARGED PROSTATE. *By Arthur T. Cabot, M.D.*, Boston............ 149

THE OPERATIVE TREATMENT OF PROSTATIC HYPERTROPHY. *By Francis S. Watson, M.D.*, Boston.. 154

STATISTICS CONCERNING INSANITY. *By Edward B. Lane, M.D*........................... 161

CLINICAL DEPARTMENT.

THREE UNUSUAL SURGICAL CASES. *By John Homans, M.D*...... 164

MEDICAL PROGRESS.

REPORT ON RECENT CASES AT THE INFANTS' HOSPITAL, BOSTON. *By T. M. Rotch, M.D.*, and *A. H. Wentworth, M.D*............... 164

REPORTS OF SOCIETIES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. *J. G. Mumford, M.D.*, Secretary............... 167

Three Interesting Surgical Cases.—Statistics Concerning Insanity.—Specimens.

PAGE

RECENT LITERATURE.

A Monograph on Diseases of the Breast, their Pathology and Treatment, with Special Reference to Cancer. By W. Roger Williams, F.R.C.S. London: John Bale & Sons. 1894.... 169

The Dynamics of Life. An Address. By W. R. Gowers, M.D., F.R.S. Philadelphia: P. Blakiston, Son & Co. 1894........................... 169

EDITORIALS.

A JUDICIOUS VALEDICTORY ADDRESS.......... 170

THE ACTION OF SMALL-BORE PROJECTILES OF HIGH VELOCITY ON THE HUMAN BODY....... 170

MEDICAL NOTES.................................. 171

Prostatic Hypertrophy.—Bequest to a Hospital.—Deaths under Chloroform.—Award of the William F. Jenks Memorial Prize.—The French Academy of Surgery.—A Woman for Health Commissioner.—A Pathologist to the London Asylums.—Women at the University of Buda-Pesth.—Texas Fever in the Southern States.—The Society of Medical Phonographers.—Small-Pox among the Refugees from Mexico.—The School of Medicine for Women in St. Petersburg.—Annual Meeting of the British Medical Association.

PAG

Boston and New England.
Acute Infectious Diseases in Boston.—Hospital Bequests.—A Change in the Boston Institutions Department.

New York.
Scarlet Fever and Diphtheria in Hoboken, N. J.—Death of Dr. E. J. Whitney.—Death of Dr. W. A. Betts.—An Infant Colossus.

CORRESPONDENCE.

MODERN FEMALE INVALIDISM. *Mary Putnam Jacobi*, St. Augustine, Fla...................... 17

MISCELLANY.

NEEDS OF THE BOSTON FLOATING HOSPITAL... 17
HEMORRHAGE AFTER TOOTH EXTRACTION...... 17
SULPHONAL POISONING............................ 17
LENGTHENING OF THE MEDICAL COURSE....... 17
COMPARATIVE STANDING OF THE AMERICAN MEDICAL PROFESSION................................ 17
METEOROLOGICAL RECORD, AUGUST 3, 1895...... 17
RECORD OF MORTALITY, AUGUST 3, 1895........ 17
ARMY AND NAVY SERVICES....................... 17
SOCIETY NOTICES..... 17
APPOINTMENT................ 17
RECENT DEATH.. 17
BOOKS AND PAMPHLETS RECEIVED 17

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VINOLIA SOAP,

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Original Articles.

THE TREATMENT OF ENLARGED PROSTATE.[1]

BY ARTHUR T. CABOT, M.D., BOSTON.

THE NON-OPERATIVE TREATMENT OF HYPERTROPHIED PROSTATE.

WE intend to confine ourselves in this discussion to the treatment of cases of enlarged prostate. It is necessary, however, to briefly review the pathological changes involved in hypertrophy of the prostate, in order to properly understand the indications for treatment.

The increase in size is due in part to a hyperplasia and hypertrophy of the glandular portions of the organ, and in part, also, to a great increase of fibrous and muscular tissue throughout the prostate. Sometimes the fibrous tissue forms distinct tumors, similar in many respects to the fibroids so common in the uterus.

This overgrowth in the prostate may be circumscribed and mainly confined to certain parts of the organ, or it may be generally diffused. Its main interest to us lies in the question as to the extent to which it encroaches on the urethra and thus interferes with the outlet of the bladder. If one lateral lobe is especially enlarged it pushes the urethra to the opposite side, and the lateral pressure may so flatten out the canal as to greatly impede or to prevent the flow of urine through it.

The part of the gland more commonly concerned in the obstruction to urination, however, is the so-called third lobe, which lies between the ejaculatory ducts and the bladder, and which really forms no distinct lobe except when hypertrophied. Then it may project far back into the bladder as a rounded swelling, or may form an elevated ridge below the urethral orifice, and, in either case, is likely to act more or less as a valve to occlude this orifice.

It is not then the size of the prostate gland merely that causes the obstruction, and a very large prostate may not encroach on the urethra sufficiently to interfere with its functions, while, per contra, a moderate enlargement of the third lobe may entirely close the orifice of exit from the bladder.

According to Guyon there is a primary stage of congestion of the prostate which precedes the state of enlargement and to which the earlier symptoms are due. This is a condition which cannot be clearly recognized after death, and the existence of which is made probable by clinical evidence rather than proved by demonstration.

Associated with enlargement of the prostate, and to a great degree dependent upon it, are other serious pathological changes. The efforts of the bladder to overcome the obstruction in the prostate naturally lead to a hypertrophy of the muscular coat of that organ; and presently the failure of the bladder to completely free itself of the urine leads to its dilatation.

Sacculation is caused by the protrusion of the mucous coat, forced between the fibres of the muscular tunic by the efforts of the organ to empty itself. Extending further backward the obstruction gradually leads to dilatation of the ureters and the pelves of the kidneys. Associated with these changes we frequently have a slowly forming sclerosis of the kidney, due to hypertrophy of the interstitial tissue.

Inflammatory changes in the genito-urinary organs behind the prostate are also brought about, and, when once existent, are perpetuated by the obstruction in the prostate. Cystitis, which is usually the first inflammatory condition to appear in these cases, may be induced by a stone forming in the residual urine, may result from some exposure to cold or to some uncommonly irritating condition of the urine, but usually owes its inception either to the irritation of some instrumental interference or to micro-organisms introduced on urethral instruments.

Inflammation in these cases, starting in the prostatic urethra and about the neck of the bladder, may have a vesiculitis or epididymitis associated with it. Later it may extend backwards through the ureters to the pelves of the kidneys, to there set up a pyelitis, and, later, a pyelonephritis. This backward extension is greatly favored by the dilatation of the ureters which so often precedes the inflammation.

Such being briefly the course of the disease, what may be done in its various stages to stay its progress and to overcome its morbid tendencies?

So little is known of the cause of the enlargement that the physican can give but little advice as to prophylaxis, based on any generally recognized physiological data as to sexual habits. The clinical evidence, however, of the importance of congestion as one element at least, in the discomfort of the disease, makes this condition one which is worth consideration. This congestion is a passive one, and is most noticed when the patient is at rest or horizontal. In short, it is when the circulation is under least pressure that the venous sinuses of the prostatic plexus become loaded with blood.

Any measures which diminish passive congestion may therefore act in a more or less prophylactic way and considerably diminish much of the discomfort of an enlarged prostate. To this end a vigorous mode of life is to be recommended, and sedentary habits are to be avoided as far as possible. If the patient has been sitting or lying for a long time, it is often well to walk about vigorously for a few minutes before passing water, as the act under these circumstances is much more complete than if performed while the congestion is still somewhat occluding the urethra.

Horseback exercise has sometimes been held to be injurious, but it seems to me that it is often of use in these patients just as it is in patients who suffer from hemorrhoids, because it so stimulates the circulation as to diminish the tendency to passive congestion.

Any chill of the surface which throws the blood to the internal organs is also to be avoided, and it is well for the patient to seek an inland climate where such surface chills are less frequent than on the seashore. Warm clothing is especially to be recommended for this same reason. During the early stages of the disease, care in these ways, with the avoidance of alcoholic beverages and articles of food which make the urine irritating, is all that is usually required. If the urine becomes sharply acid, and consequently the call to urinate is greatly increased, an alkali should be administered. Sometimes, also, sandal-wood oil is very useful in diminishing the irritation about the neck of the bladder. The iodides and ergot have had some vogue in the treatment of these cases, but satisfactory evidence that they accomplish any reduction of the gland is wanting.

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[1] Read before the Massachusetts Medical Society, Section on Surgery, June 11, 1895.

During this early stage of the disease instrumentation is to be avoided. It may often be necessary to use the catheter once to determine the presence or absence of residual urine, but if it is found that there is no residuum, in short that the obstruction has not yet become established, it is usually well to abstain from the use of the catheter, which acts as an irritant upon the prostate, which is beginning to be sensitive.

As the disease progresses and presently offers considerable obstruction to the passage of urine and leads to the accumulation of a residuum, the catheter then becomes a necessity of treatment. If the residuum amounts to but two or three ounces it will probably be sufficient to use the catheter but once a day. Sometimes when the residuum is but small, the persistent use of the catheter for a number of weeks will enable the bladder to recover its power, and the catheter can be laid aside, to be resumed if the residual urine again appears.

If the catheter is thus used early, the later ill consequences of obstruction may, to a great extent, be avoided. The bladder which is emptied once or twice a day does not become dilated and suffer loss of power through over-distension. Thus are nipped in the bud also, those deeper changes of dilatation in the ureters and pelves of the kidneys that so soon associate themselves with an over-distended bladder and that lead to the secondary changes in the kidney, which are a menace to the lives of these patients.

Recognizing then the value, or rather the absolute need of the catheter in these cases, it behooves us to remember also that the use of this instrument is not without its own dangers and discomforts, which require care for their avoidance or treatment.

In the early stages of the disease, where the catheter is first used to settle the question as to the existence of residual urine, it is well to make this test in the evening at the patient's home, so that recumbency may be maintained for some hours after the instrumentation. Often the first use of the catheter is required for the relief of a sudden retention due to an acute exacerbation of swelling in a prostate that had been enlarging insidiously for some time. And here, too, horizontal rest after emptying the bladder is of great importance.

In the choice of instruments, those which pass with least irritation are to be preferred. The soft-rubber catheter, which finds its own way and has not sufficient stiffness to risk any harm, has the widest usefulness with these patients who are often unskilful and yet have to be entrusted with the care of their bladders.

When the canal is so closed that a stiffer instrument is necessary, the elbowed catheter of Mercier, or the English gum-elastic catheter, can be used. If a patient shows especial skill, the silver instrument, which is indestructible, may be found most serviceable.

The greatest cleanliness is to be enjoined, and in obtaining this the soft-rubber and silver instruments have a great advantage, in that they are not injured by hot water and may be boiled without injury.

In obtaining asepticism it is to be remembered that the urethra is very sensitive and resents contact with corrosive-sublimate or carbolic acid, and that many a urethritis is set up in these patients by the too lavish use of these disinfectants. In the early treatment of these cases it is well to boil the catheter each time before use, but after the parts have become habituated to instrumentation the thorough immediate washing of instruments with hot water and soap before and after use is usually sufficient. The lubricant also should be clean vaseline,[3] which is unirritating and aseptic. Such are in brief the precautions which should be observed in approaching a case of prostatic enlargement in which obstruction is just developing.

Suppose, however, that a case presents itself in which retention behind such an obstruction has fully developed, and we find the bladder considerably distended by a pint or more of residual urine. Under such circumstances we may suspect that dilatation of the ureters and pelves has already commenced. If we find the urine abundant or over-abundant in quantity, but of low specific gravity, we have reason to believe that interstitial changes have already begun in the kidneys, and if the patient has a dry mouth and a lack of appetite, with occasional attacks of nausea, this will indicate that already the elimination of urea is insufficient. It is worthy of note that in this condition of renal disability, even when so far advanced that the breath has a strong urinous odor, the examination of the urine may give no indication of trouble in the kidneys beyond the low specific gravity above noted.

An examination of the heart at this time may show the secondary changes due to the increased tension of an arterio-sclerosis. With a patient in such a condition, the surgeon is face to face with a serious problem.

The choice must be made between allowing things to take their course along a steadily downward road, or making an effort by the use of the catheter to relieve the distension of the bladder and so remove the back pressure upon the kidneys. The latter course would be unhesitatingly adopted were it not for the dangers that beset it. In these over-distended bladders it is a matter of the greatest difficulty to institute the use of the catheter without setting up an inflammation of the bladder, which extends up the dilated ureters to the kidneys.

Besides the usual chances of inflammation being set up by the irritation of the catheter, or by germs introduced on it, there is in these cases the added danger from the congestion of the bladder walls, which is likely to result from a too sudden relief of the internal pressure. The hemorrhagic tendency may be so great as to lead to a profuse and troublesome hematuria if the badder is too quickly emptied. The injurious effects of the sudden diminution of the pressure in the urinary passages may make themselves felt at once upon the kidneys, and a sudden increase of the nausea and other commencing uremic symptoms, together with a rapid diminution in the amount of urine excreted, is often noticed.

With these possibilities of immediate serious consequences from the use of the catheter in these cases it may well be believed that such a course is not always wise, and it is a matter of nice judgment to distinguish the patients who will probably bear the institution of the catheter life from those who will not. In doubtful cases the question may well be left for the decision of the patient and friends, as would be done in the matter of a serious operation of somewhat questionable propriety.

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[3] That which is contained in tubes has great advantages of portability and cleanliness.

If the use of the catheter be decided upon, the dangers above outlined should be borne in mind. The patient should be put to bed, the urine should be made as unirritating as possible by the regulation of diet and by medication if necessary. The general condition of the patient should be taken into account and treated; as, for instance, if the circulation is disturbed, heart tonics may be required. The catheter should at first be used but once a day with the patient in a horizontal position, and but a portion of the urine should be drawn at a time. A good rule to commence with is to hold the catheter so that the stream is projected from its orifice, and to stop its flow when the urine begins to drop perpendicularly from its end. In this way the over-distension is removed and the stretching of the bladder wall is relieved each time without entirely removing the internal pressure.

After this has been done once a day for a time it may be repeated and gradually carried from twice to three times in the twenty-four hours, and as it becomes evident that the bladder tolerates the interference, a larger and larger quantity may be removed until finally the bladder is emptied each time.

I remember one extreme case in which the bladder formed a rounded tumor above the umbilicus, and in which on several occasions when a little too much urine had been drawn the patient had serious uremic symptoms. After this patient had been under treatment for nearly a month the urethra had become habituated to the use of the catheter, but little had been accomplished in really reducing the size of the bladder. He then returned to his home in Canada with directions to continue drawing a measured quantity of water two or three times each day in the manner that had been practised here. I saw him a year and a half later in much better condition, drawing his water completely three or four times a day, but he told me that it was a long time before the catheter finally emptied the bladder.

This case shows what may be accomplished in this way in a patient who is constantly on the verge of uremia. Mr. Reginald Harrison has suggested that in these patients with distended bladders it may sometimes be well to use the aspirating needle to partially empty the bladder rather than add the irritation of a catheter to that caused by drawing off the urine.

An aspirating needle may be used for a number of days in these cases without any local ill effects, as has been repeatedly shown in cases of impermeable urethra, and Mr. Harrison's suggestion to begin the relief of the bladder by a route which can easily be kept aseptic may be decidedly practical in some of these cases, especially those in which, while the urine is still clear and limpid, the bladder is greatly distended and prostate very large.

Dr. Keyes, in his paper on "Nephritis in its Surgical Aspects," read at the third Congress of American Physicians and Surgeons, suggests a somewhat different method of treating these cases. He uses a rubber catheter which is kept in a bichloride solution, 1 to 4,000, and which is rinsed in hot water immediately before and immediately after each use. For a lubricant he uses glycerine. As he introduces the catheter he lets a stream of 1 to 4,000 bichloride solution flow through the instrument, and thus irrigates the whole urethra. He draws the urine entirely, but slowly, with the patient in a recumbent position. He then at once washes the bladder with a solution of nitrate of silver, 1 to 1,500 or 2,000. He then washes the bladder with a 6-per-cent. salt solution, and finishes up with a 1½-per-cent. salt solution, of which he leaves what he judges to be a proper quantity in the bladder.

These manœuvres are repeated each time that the catheter is passed, except that the irrigation with nitrate of silver may be used only every second or third day if that seems best. Finally, when the tissues become hardened, a non-disinfected catheter may be safely used if simply kept clean.

I cannot speak of this method from personal experience of it, as since Dr. Keyes read his paper I have not happened to have one of these cases of distended bladder under my care, except such as were already affected with cystitis. I confess, however, that in a case of extreme distension of bladder and pelves of kidneys, I should approach with misgivings any plan which should contemplate any considerable change of the tension under which the kidneys were doing their work.

Under Dr. Keyes's plan, with good judgment in the matter of the amount of salt solution which should be left in the bladder, this danger may be avoided, and, with his high authority, the method is certainly worthy of serious consideration and careful trial.

We lastly come to speak of the complications or secondary conditions which arise in the course of prostatic cases, and which require modifications of treatment. Acute attacks of inflammation in or about the prostate require such treatment as is appropriate to the care of acute prostatitis under other circumstances. The need, however, of catheterization under these conditions introduces a disturbing element, and one which may make recovery without operation difficult if not impossible.

The commonest complication in prostatic patients is cystitis, affecting usually the prostatic urethra as well as the bladder, and readily extending, as we have seen, to the kidneys. Besides the treatment of these cases by rest and appropriate medication, we must remember that the disease is largely due to and perpetuated by the retention of fermenting urine and mucus behind the obstructing prostate, and must recognize that it is in these cases that irrigation is therefore especially needful.

For this purpose dilute solutions of boracic acid, permanganate of potash or nitrate of silver may be used. If the bladder is sensitive, great care is necessary not to abruptly distend it, as roughness in this way will often start a troublesome tenesmus.

From one to three ounces is usually sufficient to introduce at one time. When, as is often the case, the bladder contains much tenacious mucus it is sometimes of advantage to throw the fluid in with considerable force in order to detach the mucus from the bladder wall, but even in this case, a small quantity of the fluid should be used at each time.

When the bladder is much sacculated it may occasionally be wise to use more fluid, and to somewhat distend the viscus in order that the side pockets may be washed out. Sometimes, in spite of all care, the cystitis persists in an aggravated form, and the sensitiveness of the prostatic urethra is extreme.

In a patient who cannot void his own urine the frequent use of the catheter furnishes an added irritation, and the bladder is presently in a condition of almost constant spasm. Something must be done to give the bladder a rest, and this can be accomplished by establishing constant drainage.

Of the operative measures applicable to this condition you will hear later, but it is often possible to afford these patients great, if not complete, relief by fastening in a catheter. It is surprising often to see the immediate benefit obtained by this measure, and not only are the painful symptoms relieved, but the serious evidences of kidney disability when present, will also in many cases disappear. With a catheter in the bladder affording an easy escape for the urine, we can give these patients large quantities of water and flush out their urinary passages in a way that is impossible with a bladder in a spasmodic condition, which must rid itself of its contents either by painful efforts of urination or by the frequent irritating introduction of an instrument. And many a patient threatened with suppression may owe his recovery to the possibility of supplying him with this natural diuresis. I have seen the twenty-four hours' amount of urine jump almost at once from sixteen to sixty ounces when relief was thus offered.

Such is a brief outline of the care which, when faithfully carried out, will enable the majority of these patients to lead a reasonably comfortable existence often for a long series of years.

CASTRATION FOR HYPERTROPHIED PROSTATE.

We come now, gentlemen, to speak of the subject of castration for the reduction of an enlarged prostate. This subject has a great interest for all practitioners dealing with this class of cases and, especially, for surgeons interested in this branch of surgery.

In 1893, before the American Surgical Association, Dr. J. William White, of Philadelphia, suggested the removal of the testes as a means of bringing about the shrinkage of an enlarged prostate, and, in support of this suggestion, adduced many facts showing the intimate relations between the functions of the testes and the size of the prostate. The non-development of the prostate in eunuchs and in animals that have been castrated early in life has long been known; also the fact that in animals which have a distinct rutting period, the prostate is often an insignificant organ except at this time when it reaches enormous development.

Dr. White argued that if the absence of the testes produced so much effect in preventing the development of the prostate, that, possibly, their removal might bring about the shrinkage of a gland already fully formed or even hypertrophied. In support of this suggestion he reported experiments upon dogs in which he was able to show that after the removal of the testes in fully developed dogs, the prostate did indeed undergo shrinkage.

The microscope showed that this diminution in the size of the prostate of the dog operated upon was brought about by the disappearance of glandular elements and also of muscular fibres.

Dr. White also, in connection with his argument, called attention to the morphological similarities between the prostate and the uterus, and to the fact that they both had so intimate an association with sexual life that there was ground for the hope that the prostate after castration might act as a uterus with commencing fibroids often does after oöphorectomy.

Since the appearance of this suggestion and these arguments of Dr. White, the subject has been advanced by operating surgeons beyond the experimental stage and many cases have been castrated, in accordance with Dr. White's suggestion, for the cure of hypertrophied prostate.

In a paper read recently before the American Surgical Association, and, later, before the American Association of Genito-Urinary Surgeons, Dr. White has recited the results obtained by him from the study of the statistics obtainable up to this time. I am able to give his figures with a close approximation to accuracy. He has collected 111 cases with 20 deaths, which would give a mortality of 18 per cent. Analysis of the cases, however, showed that 13 of the 20 deaths could not be considered as really due to the operation; that is, the patients died in spite of the operation but not in consequence of it.

Eliminating these cases from the statistics we have 97 cases with 7 deaths, or a mortality of a little over 7 per cent. I would say that I heard Dr. White read his paper and entirely concurred with him in considering the cases thrown out as ones in which the patients were so desperately sick that their final demise could hardly be laid at the door of the operation. In a private letter Dr. White says, "Some of these seven cases were almost equally desperate, and I have no doubt that the mortality is less." He further writes me, that of the cases that survived, apparent failures, that is, those in which no improvement was noticed or distinctly stated in the report, amounted to something less than ten per cent. This would give us a percentage of about 83 as the measure of success attending these first 100 operations.

I think that to most surgeons these figures were rather a surprise. The operation was at first looked upon as a trivial one, which might be regarded as having little or no mortality, instead of which we find it has a very decided risk, almost as great as that of a litholapaxy performed at the same time of life.

It is difficult to compare these statistics with the commonly accepted figures which give us the mortality of the various forms of prostatectomy. Many of the fatal cases following a prostatectomy occur in patients with the same serious conditions as were those which Dr. White, I think properly, eliminated from his table, and the statistics of prostatectomy would have to be similarly revised in order to afford a fair comparison.

It seems difficult at first sight to believe that there can be any comparison between the mortality of so slight an operation as castration, and so serious a mutilation of delicate parts as is involved in a completed prostatectomy. It is to be remembered, however, that the condition after a prostatectomy is one which affords a very important drainage of the bladder, and, therefore, leaves the kidneys in much better condition to withstand the stress of convalescence than is the case after castration, where the relief of obstruction may be considerably deferred.

It is possible, too, that we may find that we have another element of danger to reckon with in these operations. I refer to the shock and deterioration which the nervous system may suffer from the loss of the testes. The decidedly bracing and stimulating effect which the testes exert on the whole system is generally recognized, and the inferiority in vigor of an emasculated animal is notorious. It may well be questioned whether this influence ceases when the full growth of the individual is attained. If it does not so cease; if, as Brown-Séquard believed, the testes furnish the system with tonic and stimulating substances, then in this fact we have a partial explanation of the unexpected rate of mortality reported up to this time.

If we give any weight to these considerations we must feel, as I certainly do, that the patients who have experienced relief from the operation must be watched for a longer time before the exact measure of success in their cases can be estimated; and until time has elapsed for the accumulation of facts in regard to the subsequent vigor and nervous balance of these men, we must be cautious in assuring these old patients that there are no reasons except sentimental ones against castration at their time of life.

Of possible significance in this connection is the fact that in the cases collected by Dr. White, mania followed the operation in at least two instances. I have had one experience worth noting here.

In December, 1894, I saw James W., a strong man of seventy-five, who had been troubled for five years with considerable difficulty in connection with urination. At the time that I saw him the catheter was being used regularly as he was unable to pass any water without it. He was then suffering from an acute attack of inflammation. This subsided somewhat after rest in bed, but during his treatment the catheter touched a stone and an operation was decided upon.

On January 2, 1895, the stone was easily crushed and pumped out. The patient being in a good condition at the end of this operation the testes were removed. Previous to the operation the patient was for the most part clear mentally, but occasionally had slight confusion of ideas. He tore off the dressing after recovery from ether, and was in a distinctly bad mental condition the following day. From this time he continued in a mildly maniacal condition, which persisted through the month of January, and presented the typical form of confusional insanity, with occasional exacerbations when he was quite maniacal and noisy. For some days after the operation he had considerable pain and increased resistance over the right kidney.

During this time the wound in the scrotum healed kindly, and the prostate diminished considerably in size, making the passage of the catheter much easier than it had previously been. On February 14th, he passed some water voluntarily. On February 19th, he was as much confused as ever, his mind occupied with delusions and often much depressed, referring constantly in his talk to the loss of his testes and to his business troubles. It was now decided to try the effect of the injection of testiculin.

On February 28th, when he had been for eight days receiving from 30 to 45 minims daily, the record was made: "The injections are very painful and are hurting him much. His mental condition has changed decidedly since they were started. His friends, who do not know the character of the treatment, are much pleased with the change which they began to notice two days after the first injection. He is less restless, sleeps better and worries less."

On March 6th, we have the record: "For the past four days the testiculin has been omitted, and there is a decided change for the worse, his condition having become much as it was two weeks ago. March 16th, testiculin is being used every day. Mental condition constantly improving."

After this, the injections having been very painful, they were omitted, and the mental condition continued steadily to improve. He was able to use a silver catheter himself, and finally left the hospital March 30th.

I heard later from his physician, Dr. C. D. Sawin, of Charlestown, that Mr. W. did quite well and went about with some degree of enjoyment and comfort. Some time toward the end of May, after a long ride in a carriage, he was again taken down with acute symptoms with considerable pain referred both to the bladder and the region of the right kidney. This was accompanied by high fever and delirium; and he gradually failed and died.

Dr. Sawin was able to get a partial examination, and found the prostate about the size of a hen's egg. The third lobe was enlarged to the size of a pullet's egg, and projected upwards and backward into the bladder. On its apex was a calcareous deposit firmly adherent. Posterior to this, extending forward in the body of the prostate was a cavity with smooth walls which contained about a teaspoonful of gravel. The bladder wall was thickened and injected, and showed on its surfaces a few hemorrhagic spots. The kidneys were in a state of acute pyelonephritis, and the right was about one-third larger than normal.

These cases may all of them have been examples of simple post-operative mania, which is not very rare in old persons, but I would say that in my experience of perhaps between two and three hundred operations upon the bladders of old men, I do not remember a single other instance of similar maniacal condition. So that I am inclined to reserve my judgment in regard to the remote nervous effects of these operations.

The time put at my disposal was so short that I have felt obliged to confine myself to the portions of the subject in which I feel an especial interest, and I know that Dr. White in his excellent papers upon the subject has presented more cogently than I can his strong reasons in support of the operation. So well and so convincingly has he put the case that practitioners throughout the country have adopted the operation, which is so simple that it may be readily performed by those of but slight surgical training to whom a prostatectomy would be an impossibility. It is on this account that my remarks have assumed somewhat the character of a note of warning, and I do not wish them to appear in any way to detract from the merit of Dr. White's brilliant suggestion and important experimental work.

I certainly believe that the operation has a legitimate, perhaps a large field of applicability, and in order to determine what this is, it is important that the cases should be observed and recorded with great care both before and after operation.

What we wish to know is whether castration relieves obstruction due to enlargement of the lateral lobes, or whether the third lobe is equally affected. Dr. White thinks that as he has found the third lobe rich in glandular structure, this might be expected especially to shrink. In my case reported above, the castration reduced the size of the prostate very markedly, but did not enable the patient to dispense with the catheter. At the autopsy the third lobe was found to be of large size, projecting back into the bladder.

A second question is as to the effect of castration on the fibroid tumors which are found in some prostates.

Thirdly, what rôle does a diminished congestion play in the reduction in size? The occasionally very rapid effect produced would suggest the possible importance of this.

Fourthly, may it not sometimes be well to combine drainage with castration, thus affording immediate relief to the cystitis and pyelitis while the prostate has time to shrink at its leisure?

Fifthly, is the removal of the testes followed by any profound nervous shock, or is any deterioration or loss of balance of the nervous system likely to follow it?

In the above hasty remarks I have taken it for granted that, for the present at least, the operation would be confined to cases so seriously affected that some operation is imperatively demanded. It is conceivable that, if subsequent experience proves castration to be free from remote disadvantages, patients may sometimes elect to have it done early in the disease, before the bladder and kidneys have suffered secondary changes, and when it might be more efficacious in arresting subsequent morbid growth than afterwards in removing it.

Such possibilities are so alluring that we should approach them with cautious and careful scrutiny.

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THE OPERATIVE TREATMENT OF PROSTATIC HYPERTROPHY.[1]

BY FRANCIS S. WATSON, M.D., BOSTON.

In the paper which we have just heard from Dr. Cabot, that part of the subject which deals with the palliative measures has been discussed; they suffice in the majority of cases to avert or postpone the dangers of the disease, and to make the patient wholly or tolerably comfortable. It remains to be considered in what way we are to deal with that unfortunate minority of sufferers who, in spite of them, go on from bad to worse. For them there are, fortunately, other means which may relieve. These are the operative ones.

They may be divided into two classes: (1) Palliative, (2) Radical. The former consist of the various ways of draining the bladder, and are equally applicable to temporary, or to long continued, or permanent drainage. The two ways of securing bladder drainage are through the perineum by a perineal urethrotomy, and from above the symphysis pubis by a suprapubic cystotomy.

The technique of these operations is so familiar that I will only refer to some of its more important points when speaking of drainage.

When drainage is conducted through the perineum, it is desirable to provide for it in a manner which will thoroughly drain the bladder, and, if the treatment is to be continued for a long time, will allow the patient to move about comfortably. The arrangement which I think best fulfils these indications is that which I devised some three years ago. It consists of a hard-rubber button with a hole in the centre through which a catheter is passed, and four smaller holes, two on the upper and two on the lower margin, to which are attached four stout round rubber cords, which, when fixed to a waistband properly adjusted, hold the button firmly against the perineum.

The central hole in the button is to be one size smaller than the catheter it carries; if the catheter is stretched its calibre is of course diminished, and the button can then slide along it, but becomes fixed at whatever point may be desired by letting the catheter take its natural shape.

Dr. Tilden Browne of New York has contrived a similar arrangement, of which he speaks as follows: "The holder is of light construction except the two steel springs; these have sharp teeth which hold but do not puncture the rubber tube. The springs release the tube by turning the screw collar. The cylinder has a calibre of thirty-five, French, and the spring teeth have play sufficient to hold any tube of from thirty-five to twenty-two, French. Tapes or narrow bandages slipped under the horns of the plate, then brought up radiating and secured to a waistband in front and behind hold the apparatus in place. A continuous tape for each side is preferable, as it permits the plate to remain stationary while they play through or under the horns, as the changed position of the body in sitting or reclining may necessitate. The plate is narrow enough not to meet the opposing surfaces of the thighs. Nor does it interfere with defecation. I have the patient wear a fresh pad of iodoform gauze between the perineal opening and the plate after each movement of the bowels." (Fig. 2.)

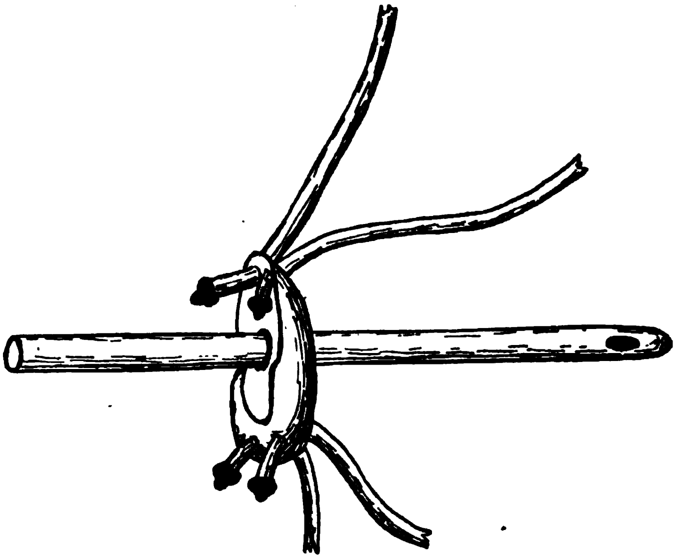

FIG. 1. The author's perineal drainage-tube, and hard-rubber button.

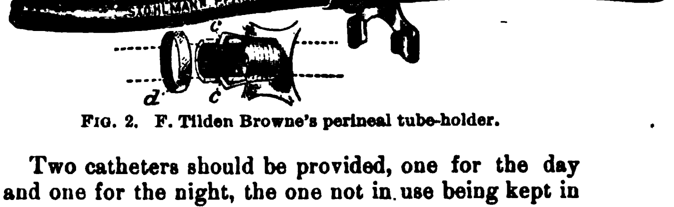

FIG. 2. F. Tilden Browne's perineal tube-holder.

Two catheters should be provided, one for the day and one for the night, the one not in use being kept in a weak solution of carbolic acid.

With regard to suprapubic cystotomy, I think the practice of puncturing above the symphysis with a large trocar and leaving in the canula is a dangerous one, and should be condemned. It is much safer to do a true cystotomy. The incision into the bladder, when made for drainage alone, should be a short one.

Several modifications of the suprapubic operation for drainage have been introduced, the most notable being that of Hunter McGuire, who several years ago devised a method for making an artificial suprapubic urethra, which he does as follows: The opening into the bladder is made at the lowest available point, and only the upper end of the abdominal wound is left open, the rest of it being sutured. This leaves a fistulous tract about three inches long, the walls of which are held together by pressure of the abdominal viscera and the action of the recti muscles. It is claimed that in this way the patients are given voluntary control of the bladder. Morris of New York has modified the operation by turning skin flaps down into the channel.

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[1] Read before the Massachusetts Medical Society, June 11, 1895, and recommended for publication by the Society.

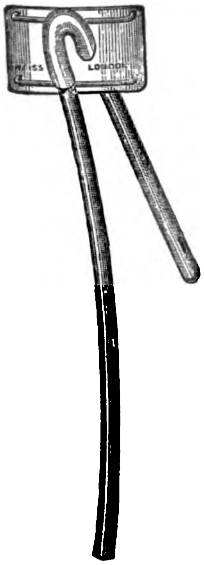

FIG. 3.
Buckstone Browne's suprapubic drainage-tube.

A variety of contrivances for carrying out suprapubic drainage have been introduced; one of them will suffice as an illustration of those which are suitable for permanent drainage; it is that of Mr. Buckstone Browne (Fig. 3). While the patient is still confined to bed, the double tubes of Perier, led through the dressing, I have found to be the most useful of those that have been proposed. They are shown in Fig. 4. If properly applied, the patient is kept perfectly dry. Dr. Fowler, of Brooklyn, and Dr. Farrar Cobb, of Boston, have suggested capillary drainage, the latter by means of an iodoform wick led through a glass tube. This method, also, is applicable only while the patient remains in bed.

The relative merits of the high and low operations as performed for drainage alone are as follows: The perineal is safer, is more rapidly done — an important point in these cases in which the danger is greatly increased by the effect of prolonged etherization on the lungs and kidneys. In performing it the urethra can be laid open with one cut of the knife under primary anesthesia, and as soon as this is done the ether can be removed. The disadvantages of the low operation are that some patients cannot support the presence of a catheter in the deep urethra, and that it sometimes causes epididymitis. The high operation avoids these drawbacks, and offers the special advantage of allowing exploration of the bladder; the tube also is generally worn more comfortably above the symphysis than through the perineum; on the other hand, the high operation is rather more serious, takes more time, and if there is a small, contracted bladder, or if the patient has a large belly, the high cut may be very difficult to execute. Occasionally the perineal operation is embarrassed by anchylosis of the hip. From which it will be seen that the choice will be determined by the condition of the patient, the degree of irritability of the deep urethra, etc. If, for example, the patient has chronic bronchitis, threatening uremia, and is exhausted, one would naturally drain his bladder in the easiest and quickest manner possible, and that would be through the perineum; or if it is thought best to avoid even the slight shock of that operation, a catheter can at least be tied in through the urethra. A very simple and satisfactory way of doing this occurred to me while operating one day on a case of stricture; it is that shown in Fig. 5, and consists in slipping over the outer end of the soft-rubber catheter that is to be passed into the bladder a piece of drainage-tube about five inches long, which has been cut in halves longitudinally, except for an inch and a half, through which the catheter passes, and by which it is firmly held so that it cannot slip in or out; all that remains to be done is to lay one of these halves along either side of the penis, and to retain them there by two circular strips of sticking plaster surrounding the organ. The catheter should be a little larger than the inner calibre of the drainage-tube, so that the latter will bind it sufficiently to prevent its slipping in or out.

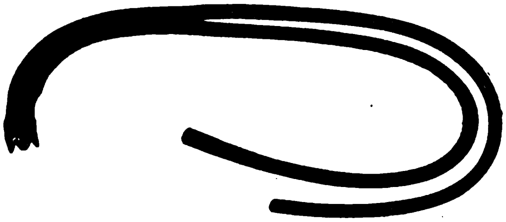

FIG. 4.

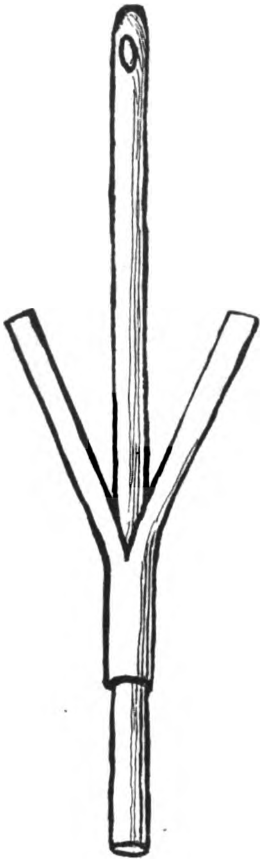

FIG. 5.
The author's method for tying in a soft-rubber catheter into the bladder.

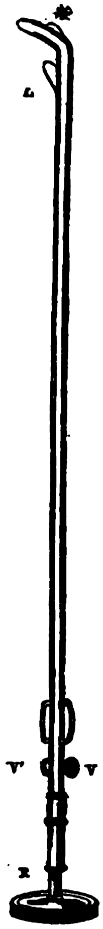

FIG. 6.

The benefit of permanent drainage is twofold; it relieves cystitis, and what is more important it often averts or lessens the dangers of pyelonephritis, which is so frequent an accompaniment of this disease. I do not think that sufficient attention has been given to this method of treating the pyelonephritis in this class of cases. Reginald Harrison advocated it several years since, and I have found it give strikingly beneficial results in a number of cases. The surest sign of improvement of the renal condition is an increase in the specific gravity of the urine; with it there is usually a marked gain in the general condition of the patient.

Whatever may be the manner of securing bladder drainage, its essential feature is, I believe, that it be maintained, or at the least that the channel for drainage shall be kept open, so that it may be resumed at any time, without a subsequent operation to re-establish it. This, because the conditions for which drainage was originally undertaken, even if temporarily relieved, are, practically speaking, sure to return in this class of cases, if drainage is wholly suspended and the channel allowed to close.

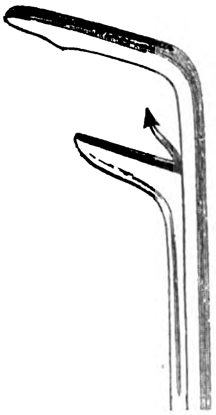

Fig. 7.

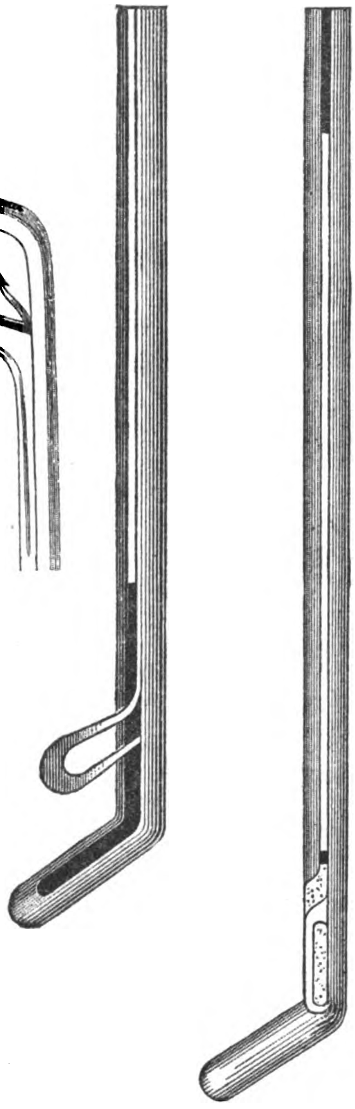

Fig. 8. Bottini's instrument.

RADICAL OPERATIONS.

The defect of the operations for drainage alone is that they do not remove the cause of the trouble. It is not surprising, therefore, that surgeons should have tried to do this; and dating from the time of John Hunter we find records of various methods by which removal of the obstructing portions of the gland was attempted. But the first systematic effort was made by Mercier, in 1857, who divided small median enlargements by means of specially constructed instruments, which he passed through the urethra (Figs. 6 and 7), and reported successful results. Mercier had no followers, however, until Gouley in New York and Bottini in Italy revived his operations about twenty years later; the latter performing them with a galvano-cautery instrument of the same form as that of Mercier's (Fig. 8); the former making the first step in advance by doing them through an external perineal urethrotomy.

In 1884 Harrison reported successful results from tunnelling the prostate with a trocar, and instituting drainage by leaving the canula in the channel so made; then in 1886 we have the introduction of the suprapubic method by Belfield of Chicago, and its establishment a little later through the successful cases and advocacy of McGill and Atkinson of Leeds in England, under the name of suprapubic prostatectomy. This was in 1886 and 1887. I did my first suprapubic prostatectomy in December, 1886, and my first perineal prostatotomy in the spring of 1887, but these cases were not published until 1888, when they were reported at the annual meeting of this Society, in June.

At that time the subject was in a very chaotic state; there was no agreement among the few surgeons who had done the radical operations as to the best methods to employ, and all such operations had recently been condemned by the authoritative statements of Sir Henry Thompson, Guyon and Socin.

The monograph which I published in 1888 had for its objects, to disprove the conclusions of Sir Henry Thompson and the others, to formulate the subject, and to place it upon a rational basis. In short, to show that these radical operations were feasible, in what class of cases they were appropriate, to demonstrate what the conditions were that should determine the choice of method, how they were to be best performed, and finally what prospect of success they offered. The conclusions were based upon anatomical investigations that had extended over a number of years, and upon such clinical data as were then available; the latter consisting of 21 cases of prostatotomy and 26 of prostatectomy. The conclusion reached was that a majority of cases could be successfully operated upon through the perineal route. It must be remembered that the subject was in its infancy then, and that in spite of the improvements in the high operation recently introduced, it was still a much more serious one than at present; my opinions have been since greatly modified in favor of the high operation, and still more recent methods to be mentioned presently.

From this time there was a rapid advance, and the number of cases reported multiplied fast. Opposition arose, however, especially from the French school, and was expressed in an interesting essay by one of Guyon's former pupils, Vignard, who in 1890 tried to prove that the loss of expulsive power of the bladder must be in the great majority of cases a factor fatal to the success of radical operations, even though, as had been demonstrated, the obstructing portions of the gland could be removed with moderate safety. He was met by Belfield and others with a mass of clinical observations which had within a short time afterward accumulated to the number of 150 cases of radical operations, in which it appeared that two-thirds of the patients who survived had regained most of or the entire power of natural evacuation of their bladders after the operations, and were in good general condition. Since 1892 the operations have been modified and their scope extended, and to-day the operative treatment of prostatic hypertrophy is a well recognized and established procedure.

Such is, in outline, a sketch of the evolution of this part of the treatment of the disease, up to the most recent steps in advance. The latter I will describe, so far as the very short time at my disposal permits, when speaking of the technique of the radical operations, which I will now take up in sequence, as follows:

(1) Perineal prostatotomy. (2) Perineal prostatectomy. (3) Dittel's operation. (4) Tunnelling the prostate. (5) Zuckerlandl's operation for total extirpation of the prostate.

(1) Perineal prostatotomy consists, as you know, in a division of a median enlargement through an external perineal urethrotomy; it is efficient in but a limited number of cases, those in which there is a bar at the neck of the bladder, and being but little less dangerous than (2) a perineal prostatectomy, which is more thorough, it has given place to that operation for the most part; the latter is applicable to such cases as have but little or no lateral enlargement, and in which the median enlargement is a bar simply or a small lobe. The condition of the prostate can ordinarily be determined beforehand by rectal examination, and exploration of the bladder with a short beaked sound, more or less accurately, and the method of operation selected accordingly. If there is a small pedunculated middle lobe it can sometimes be surrounded by a wire snare passed beside the left index finger and held in position by it while the wire is drawn tight by an assistant; if there is a bar at the neck of the bladder, the excision of a V- or U-shaped piece from its central part will usually open a clear road into the bladder; these incisions can be made with a probe pointed bistoury, or with a galvano-cautery, or with instruments of special forms called prostatectatomes, of which there are a variety; the after-treatment consists in drainage and cleansing of the bladder.

Next comes Dittel's operation (proposed by him and executed by Küster). It consists in the excision of a wedge-shaped piece from each lateral lobe, at their anterior ends, after exposing the prostate and separating it from the rectum through an incision beginning at the tip of the coccyx, embracing the sphincter ani in the form of an ellipse and terminating in the middle of the perineum, the object of the excision of these portions of the gland being to cause widening of the prostatic urethra by the subsequent cicatrization of these wounds in a lateral direction, with the idea that the part of the lateral enlargement bordering the urethra would thus be drawn outward to either side. Küster's cases were not sufficiently successful to encourage further trial of this method, nor does it seem to me to be founded on a sound principle, and finally, there are other means at our disposal which promise better results.

Tunnelling the median lobe through a median perineal urethrotomy, as practised by Reginald Harrison, has already been spoken of when discussing drainage. I do not think that this surgeon now employs it, and there is no difficulty in draining the bladder satisfactorily through the posterior urethra. The distance to be traversed by a trocar in tunnelling is often long, and the opening up of the tissues is by no means free from danger; the operation therefore does not seem to me to be a good one.

The last of the perineal operations is that proposed by Zuckerlandl for total extirpation of the prostate; he suggests that this be done by separating it from the rectum, and then dissecting it from the bladder through a long transverse crescentic incision extending across the perineum from the tuberosity of the ischium on one side to that on the other; this operation has not, so far as I know, been actually performed.

SUPRAPUBIC PROSTATECTOMY.

In the first place let us glance at the history of suprapubic cystotomy apart from its application to the prostatic removals. It is a time-honored one, and has passed through many vicissitudes. The suprapubic operation, properly speaking, had its origin in the hands of Pierre Franco, who performed it at Laussanne in 1560, for the removal of stone; we find already with him the suggestion of one of the modern steps of the operation, that of lifting the bladder upward, and making it more accessible by raising it by pressure from the rectum; this Franco did by two fingers of the left hand pushed well within the rectum. The case of Jean Doot of Amsterdam, a bootmaker, who, assisted by an apprentice, cut a stone out of his own bladder with a cobbler's knife from above the symphysis, and lived to tell the tale for many years afterwards, is one of the most interesting of the early ones. Another of the modern steps was forestalled by more than three centuries by Rousset (1581), who tried to raise the bladder by filling it with water, and about one hundred years later (1685) Piétre accomplished the same end by introducing into the bladder a long beaked sound armed with an arrow-like point, which could be projected from its tip. After the preliminary incisions, the tip of the instrument pushed up the anterior wall of the bladder above the symphysis and pierced it with the dart, which then acted as a guide to the incision into the organ.

The operation was frequently practised by laymen, as were the perineal cuts for stone, especially by priests. These men were known as "cutters for stone," and if we may believe the records, some of them had as wide an experience and almost as great a success as the surgeons of to-day. The operation was not much heard of between 1650 and 1750, at about which time it was revived by Douglas and Cheselden in England, after which it became relatively popular and extended to France and Germany, being practised in the former most successfully by the priest Frère Cosme, who in 1799 had performed the operation 100 times with but 19 deaths, not a bad record when we reckon with the absence of asepsis. In our own century, we find it in the hands of numerous surgeons: Dupuytren, Souberbielle, Sir Everard Home, Leroy d'Etiolles, Nelaton, Civiale, etc., etc. But between 1840 and 1880 the operation steadily lost ground on account of the introduction of lithotrity by Civiale, and of the much smaller mortality attending this and the perineal operations for stone.

In 1880 it was once more resuscitated by Petersen, who proposed to avoid wounding of the peritoneal fold covering the anterior surface of the bladder, which injury had been one of the chief dangers of the operation, by lifting the bladder well above the symphysis by means of the combination of filling the organ with water, and distending a rubber bag previously inserted into the rectum. This manœuvre, when practised in connection with the modern aseptic methods, lowered the mortality so much that the suprapubic operation once more took its place among the favorite surgical procedures, and its use was very soon further extended by its application to cases of bladder tumors and prostatic hypertrophy.

In Petersen's method about ten ounces of fluid were injected into both the bladder and the rectal bag. Presently reports of cases in which the bladder had been ruptured or the rectum injured were published, the procedure was thus shown not to be free from danger. This accident, however, has happened very rarely, and if in the adult not more than eight ounces are used for each injection it practically never will happen. Many surgeons have discarded Petersen's method, employing instead the Trendelenburg position, (Fig. 9), which was introduced by that surgeon about this time, and which has become since so familiar to all. The elevation of the pelvis in this position lets the abdominal viscera fall toward the diaphragm, in doing which they draw the bladder after them out of the pelvis above the symphysis.

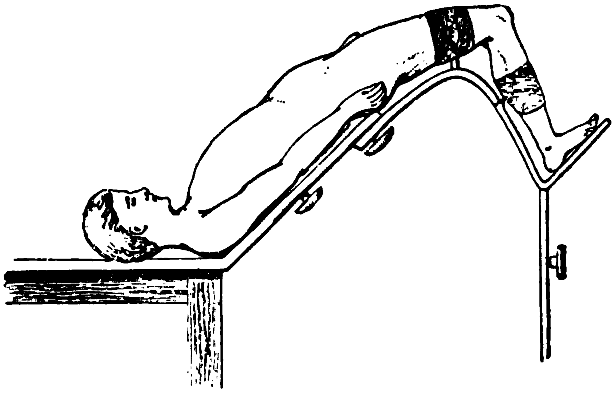

Fig. 9. Trendelenburg's position.

Trendelenburg's position is of much service, but the patient should be kept in it for as short a time as possible, especially if he is old and enfeebled. On this account I prefer to make the preliminary incisions before so placing the patient.

As to the incisions themselves we have the choice between the old vertical one and the transverse; the former extends upward from the middle of the upper margin of the symphysis for about three inches, and is carried down to the prevesical space through the linea alba and between the pyramidales muscles. These first cuts can be made rapidly until the prevesical space is exposed. This is easily recognized by the fat tissue which fills it. Immediately beneath the fat lies the bladder and within the fat layer the peritoneal reflection of its anterior surface. The bladder is now exposed in one of two ways. The fat tissue can be raised up by the tip of the finger inserted below the symphysis, or it can be divided cautiously with blunt-pointed scissors. I do not like the former method, because there is necessarily more or less disturbance of the prevesical tissues. When the fat is abundant a great quantity of it has to be drawn up before the bladder surface is laid bare. A considerable cavity is formed in consequence, which gives lodgment to the urine, and may be the starting point of serious suppuration, even in our aseptic days, while the only objection to dividing the fat with scissors is the chance of wounding the peritoneal fold, which lies in it, but with ordinary care this is easily avoided. The bladder presents itself as soon as the fat is divided. It is readily recognized by its bluish red color and by the large veins upon its surface. I think it best to place the patient in the Trendelenburg posture when the prevesical fat is reached and before it is divided. In doing this as the pelvis is raised, if the tip of the finger is laid in the wound the bladder can often be felt as it emerges from the pelvis. With Trendelenburg's as with Petersen's method the peritoneal attachment is usually carried far enough above the symphysis to readily escape being wounded. If using the former it is well before opening the bladder to protect the peritoneal cavity from the urine by packing sterilized pads around the part of the bladder to be incised. If the patient is not in the Trendelenburg position a tenaculum should be passed through the bladder wall below the peritoneal attachment and held by an assistant in order to keep the bladder raised after it has been opened. The same result may be obtained by passing a suture through the bladder wall on either side of the proposed incision and through the margins of the abdominal wound; this can be done with a short curved needle. The tip of a long beaked catheter which has been previously passed into the bladder and pressed against its anterior wall above the symphysis, though not necessary, serves as a good guide in opening it. The transverse cut gives more room, and the bladder can be exposed more rapidly by it. Its defects are the risk of hernia and more or less impairment of function of the muscles. It is made in the form of a crescent, with its centre opposite and a little above the middle of the symphysis, the deeper cuts being in the same line, and dividing the whole or a part of the recti and pyramidales. On turning up this flap the prevesical space and its contents are freely opened to view, Personally I make a compromise between the two, dividing the skin by the transverse cut, and turning back a good-sized flap. The underlying fascia and muscles are thus fully exposed, and it is very easy to pick out the line of division between them, which I then lay open by the vertical cut, and if more room is needed later in the operation it can readily be gained by snipping with scissors the inner borders of the muscles on either side. It is very rare that more room will be required than is given by this means.

In opening the bladder the vertical or the transverse cut can be used. I see no advantage to be gained by the latter. The vertical cut into the bladder is to be made between the two sutures already described, with one stroke of the knife, avoiding the veins on the surface of the bladder, if convenient; no harm of consequence is done if they are wounded, for the congestion of the vessels is so much diminished when the organ is opened that hemorrhage ceases spontaneously as a rule. Up to this point the steps are alike for intravesical operations of whatever nature. In attacking the prostate there are special measures to be taken.

In the first place, much help may sometimes be gained by inspection as well as palpation of the gland within the bladder; to effect this several contrivances are used. Hurry Fenwick has introduced an instrument, which he terms a caisson. Figs. 10, 11 and 12 show this device. By it is sought the opportunity to work at the bottom of a dry well, so to speak, on a diminutive scale, as is done on a large one in laying the foundations for the piers of bridges, etc. I have never used it and so cannot speak of it from experience.

Perhaps because of the partiality of the inventor for his own inventions, I like my own instrument best for this purpose; it requires a little practice before it can be used with advantage, and I think it is rather more suited to cases of bladder tumors than to the prostatic ones, but it may be equally serviceable in many of the latter. It is represented in Fig. 13.

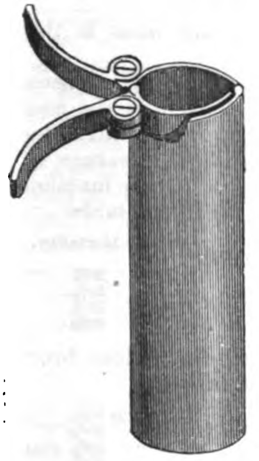

Fig. 10.

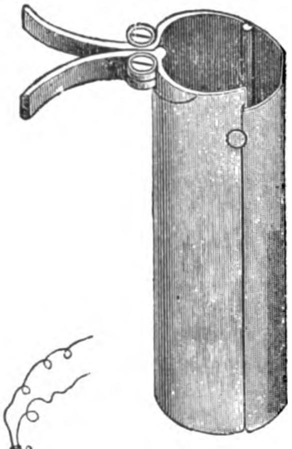

Fig. 11.

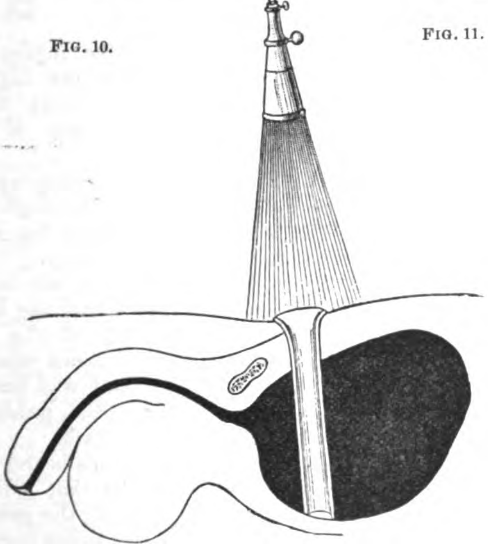

Fig. 12. Hurry Fenwick's "Caisson" for inspecting the interior of the bladder.

The removal of the obstructing portions is effected according to their form and size; formerly, only the parts projecting into the bladder were removed, but it was found that it was necessary to do more if a clear road for the exit of the urine was to be re-established; a prolongation of the middle lobe into the prostatic urethra is, for instance, pretty constant, and this when present should always be removed as well as the salient part of that enlargement within the bladder. Again it is often requisite to take away more of the lateral lobes than is represented by those parts which project within the bladder. This was at first done by splitting the mucous membrane and capsule over these parts, and shelling out the obstructing lateral portions, if, as often happens, they consist of distinct enucleatable masses (fibro-adenomata); if not, by removing them with curette, or biting them off piecemeal with suitable instruments. Later, the same end was accomplished better by the combined operation, which will be described presently. If there is a salient middle lobe, it can be taken away with scissors, or galvano-cautery, or by the snare.

The *combined operation* offers greater facility in effecting the removal of the lateral parts of the prostate than either the perineal or suprapubic, alone; it consists in doing first the perineal, and then the suprapubic, or vice versa, according to the conditions presented by the individual case. The mucous membrane and capsule of the gland are then incised over the portions projecting into the bladder, the finger of the left hand pushes the prostate up from below while the enucleation of one or both lateral lobes, in turn, is accomplished by the index finger or a blunt periosteum elevator; in doing this there is sometimes very free hemorrhage. The removal will have to be accomplished in some cases with a curette, in others it is not difficult to shell out the growth whole.

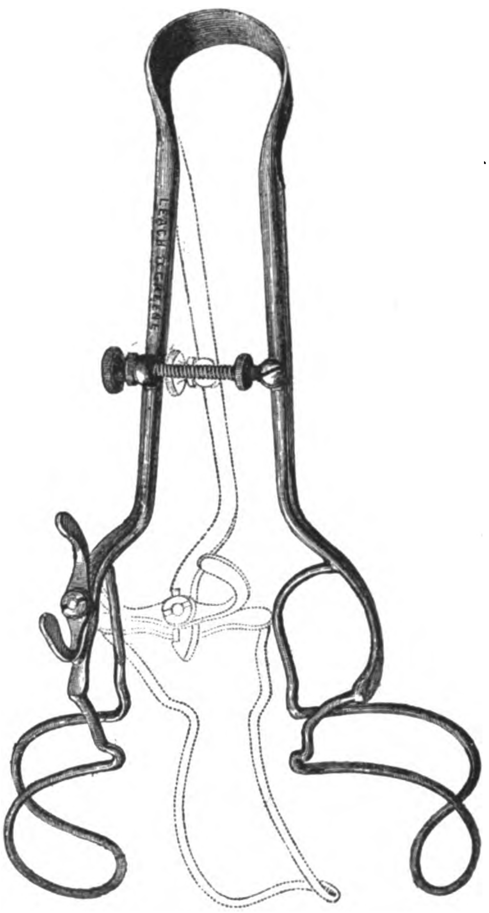

Fig. 13. The author's bladder speculum.

Nicoll has modified, and as it seems to me very advantageously, this operation, by not opening either the mucous membrane of the urethra, or of the bladder over the prostate. By his method a sound is passed into the deep urethra to act as a guide, an incision is made into the perineum down to the apex of the prostate, but avoiding the urethra, the capsule of the prostate is then incised sufficiently to admit the tip of the index finger easily. In doing this, some part of the prostatic plexus of veins is apt to be cut and a more or less severe hemorrhage to result; this may be controlled by packing, while the operator proceeds to open the bladder by the suprapubic cut. Through the latter incision, the prostate is pressed firmly downward by the finger from above, and as much of the lateral enlargements as may be required to give a free exit from the bladder are removed through the lower wound in the manner already described. Hemorrhage is not usually severe; when it is, it is best controlled by means of the tampon of Keyes as modified by Cabot (Fig. 14). The tampon consists of a long bit of sterilized gauze folded in squares upon itself, as shown in the accompanying figure. It is placed in the bladder and the thread which runs through all its layers (A) is carried out through the perineal wound, and upon being drawn tight and secured outside the perineal wound presses upon the bleeding area within the bladder. The second thread (B) is fastened to the upper layer only of the gauze and is led out through the suprapubic wound. When it is desired to withdraw the tampon the lower thread is cut, and the upper one being pulled the gauze is unwound layer by layer without difficulty. This may be done usually at the end of forty-eight hours.

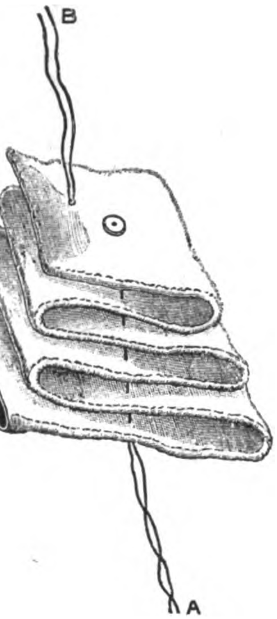

Fig. 14. Cabot's hemostatic tampon.

In cases in which there is great enlargement of the gland it might on rare occasions be desirable to use Helferich's modification of the suprapubic operation; this consists in resecting the middle portion of the upper margin of the symphysis pubis, the intention of the operation being to give more room to carry out the subsequent steps.

There is finally one other method of entering the bladder, which I think is especially interesting. It is that proposed by Rydygier, and performed in three instances in my own knowledge, once by Dr. Frank Harrington and twice by Dr. Abner Post, of Boston. I refer to making the bladder incision through its peritoneal investment instead of avoiding it. In the three cases referred to above the result was entirely satisfactory, and no harm whatever resulted. The advantages, of course, are that no time is lost in trying to avoid the peritoneum, that more room is afforded, and finally, that when it is desired, there is much better chance of securing first intention of the wound by suture. The bladder should be carefully irrigated beforehand, and a catheter *à demeure* is to be worn for about two weeks afterward.

Two questions remain to be answered. What determines the choice of operation, and what is the chance of success.

To answer them we must first know what has been done, and this is set forth approximately in the first table below, together with the mortality attending each method; and next, what is the percentage of cases in which there is restoration of the function of the bladder. This appears in the second table.

	Cases.	Mortality.
Suprapubic prostatectomy, and the combined operation	109	20%
Perineal prostatotomy	29	10%
Perineal prostatectomy	16	20%
Dittel's operation	3	00%

The percentage of restoration of the bladder function after different operations is as follows:

Suprapubic prostatectomy	nearly	80%	
Perineal prostatotomy	"	50%	
Perineal prostatectomy	"	50%	plus.
Combined operation		50%	
Dittel's operation		30%	

From the above it will be seen that the suprapubic and the perineal prostatectomies have the highest mortality, but that the former has 30 per cent. more of recoveries of bladder function than any of the other methods.

This is what we should expect, since the suprapubic and the combined operations are more thorough and more serious than the perineal ones. This too must be remembered when reckoning the mortality.

Then again, as Mansell Moullin points out in his last work upon the subject (Enlargement of the Prostate), published in 1894, the mortality of the first half of this series of suprapubic operations was 25 per cent., whereas that of the last half was but 15 per cent.; and Mr. Mayo Robson, in 1894, published twelve consecutive cases with but one death.

It must be further remembered that this is the least favorable view of the operative results that will be shown at any time in their history, should the practice be extended in the future, because this series includes all the operations performed in what may be called the experimental stage of the undertaking, in which it must be remembered they have been applied to those cases only which have already passed into the worst forms of the disease.

Could we collect an equal number in which this operation had been performed earlier, in anticipation of the graver stages, we should no doubt find a greatly lessened mortality.

Then too, what of the dangers of not operating! We know very well that they are grave, but how great as compared with the operative risk, we know not at all. No one has ever, so far as I know, formulated any extensive observations as to the number of cases of prostatic hypertrophy which had already reached the graver stages of the malady (in which condition, be it remembered, almost all the patients

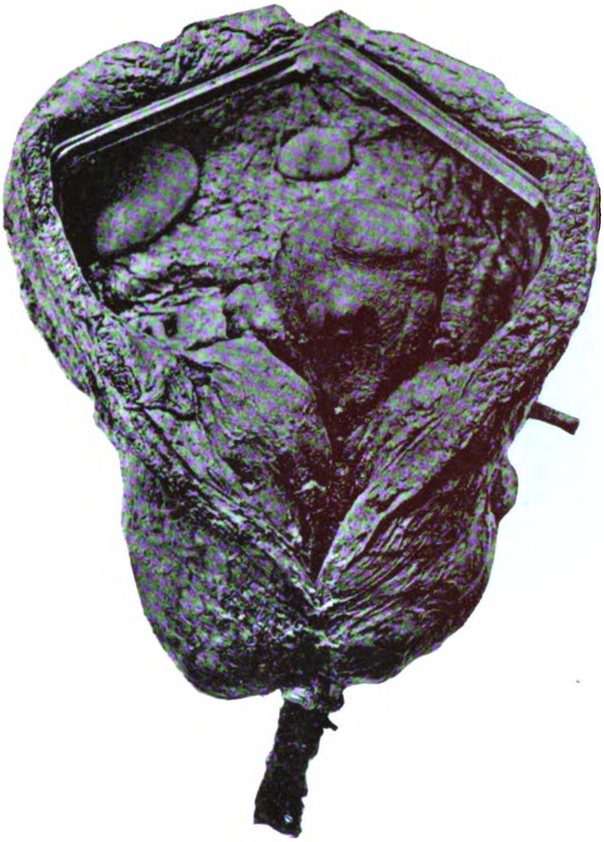

FIG. 15. From the author's operative treatment of the hypertrophied prostate, 1888.

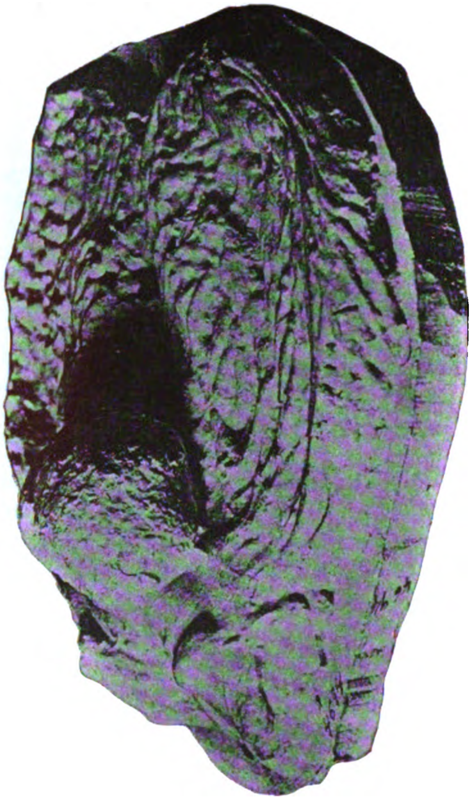

FIG. 16. From the author's operative treatment of the hypertrophied prostate.

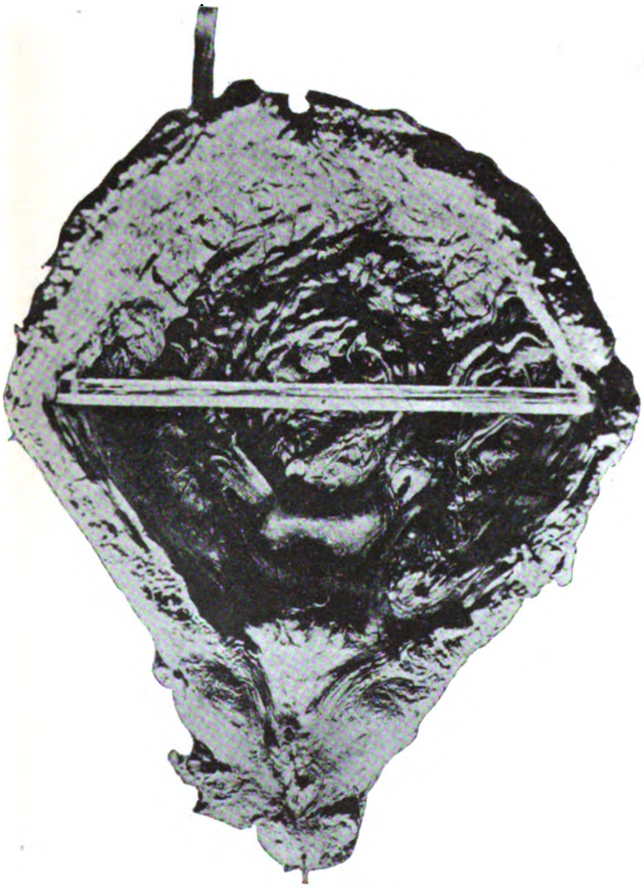

FIG. 17. From the author's operative treatment of the hypertrophied prostate.

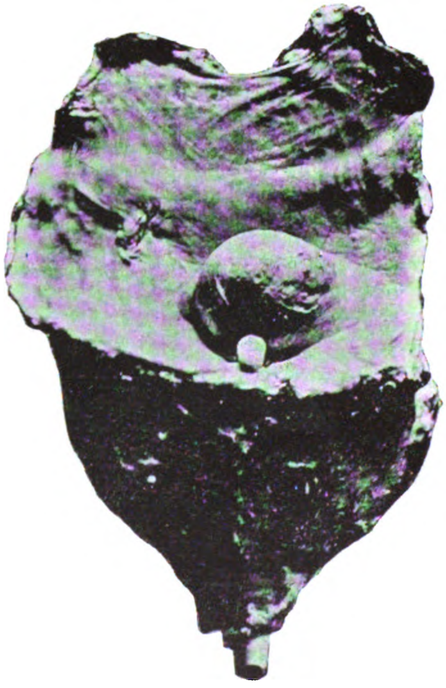

FIG. 18. From the author's operative treatment of the hypertrophied prostate.

have been, upon whom the radical operations have been performed), and shown the results in the absence of operative, and while continuing under palliative treatment. If such compilation were made, it is my own impression that the comparison would prove favorable to the operative measures, in that particular class of cases.

The choice of operation depends, I think, upon the following factors. First, the age and general condition of the patient. Thus, if we have to do with a very feeble or a very old man, whose term of life is in all probability but a short one at best, we should naturally prefer to operate for drainage of the bladder alone, as described in the first part of this paper.

If the patient, on the other hand, is in good general condition, has not yet shown evidence of serious renal trouble, and might, if radically relieved of the obstructing prostate, live for a good many years, then it is right to try the more radical measures; and of these, for the reasons already given, I prefer the combined operation as modified by Nicoll for all cases in which it is necessary to remove considerable portions of the lateral lobes, as in Fig. 15, and the simple suprapubic method, where the median portion alone is involved, and is large (Fig. 16). When there is a bar at the neck of the bladder, or a small median enlargement (Figs. 17 and 18), I think perineal prostatectomy is to be preferred. It will usually be successful, and is a safer operation than the high one. This is the view of the operative treatment of prostatic hypertrophy that I should have given one year ago.

In the last year three new methods have come upon the scene.

The first is that of ligature of the internal iliac arteries for the purpose of producing atrophy of the prostate by limiting the blood supply. Of this I have only to say that it seems to me a thoroughly irrational procedure.

The second, suggested by Dr. Mears, of Philadelphia, is ligature of the spermatic cords, with the hope of producing atrophy of the prostate, by a similar effect to that of castration, but by a lesser operation. Of this method there is not sufficient experience to base a judgment upon at present.

The third seems likely to revolutionize the treatment, and may perhaps replace and make obsolete all the operations which I have been describing to you. It is that of double castration, proposed by Prof. William White, of Philadelphia, in June, 1893. This part of the subject will be presented by Dr. Cabot, and I will therefore not enter upon it.

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STATISTICS CONCERNING INSANITY.[1]

BY EDWARD B. LANE, M.D.

THOSE of us who are working in hospitals for the insane are asked daily by some one, What is the cause of insanity? or perhaps more often of late, What is the cause of the terrible increase of insanity, as shown by the census?

Strictly speaking, we who see the insane in hospitals cannot answer this question, which is one of the problems of social statics, with the authority that is expected of us. Questioning the patient will not give us the truth as to the cause of his trouble. The friends are very loth to admit certain causes that would injure their family pride, and they deceive themselves into believing that overwork was the cause or ill health, whereas the family physician, if we perchance meet him, lets a flood of light upon the subject. He tells us perhaps of dissipation or of questionable habits which no one likes to confess of himself or his brother.

But for all this, asylum physicians think more upon this subject than do others, and people have a right to ask of us, What is the cause of insanity? and, What cause or causes are operating to make our hospitals so crowded faster than liberal States and cities can build new and expensive hospitals?

Many, years ago it occurred to some former commissioner of lunacy, perhaps of the Roman Empire, to demonstrate the causes of insanity. Commissions of lunacy ever since have not ventured to depart from the time-honored custom, namely, to request the superintendents of hospitals to forward to such commission or publish in his annual report the causes of insanity. If a superintendent reports 847 admissions, he is to fill out the table of causes; and he is forced by unalterable custom to report 847 causes, no more, no less.

A few men try conscientiously to make this table as near the truth as possible. But the request is an absurd one. Even more absurd than when as physicians we are expected to give the one cause of death in the return to the board of health when the pathologist reports no less than twenty lesions discovered at the autopsy. I confess I have been embarrassed more than once to select from the pathologist's list of from twelve to fifteen lesions the one cause to be put on the death-certificate. Who of us will not be influenced, unconsciously perhaps, to consider appearances and professional pride in selecting the "principal cause," for official record? How much more are friends or family physicians influenced in filing the cause of insanity to go on the commitment papers to be filed in the Probate Court!

It is the exception, I believe, that there should be a single cause for an outbreak of insanity; and I would respectfully suggest that our statisticians at the State-houses revise their method of getting at the causes. This has been attempted in one point the past few years in Massachusetts. I think all asylum men who have given this subject consideration are thoroughly dissatisfied with the cause-table in our reports. I have long felt that the compiling of it was not only a waste of time but that the result was a scientific lie.

As in so many things in our human life there are exciting causes and predisposing causes; and what we want to see tabulated is, In how many of the 847 cases was there evidence of heredity? in how many cases evidence of excess? in how many marital or family trouble? Such tables should be the result of careful study and not compilations from the commitment papers, the authority of which is generally grossly unreliable in the matter of cause — and I know many tables of causes in our hospitals are merely such compilations.

But if, then, our tables of causes are so unreliable, fortunately most of our other tables are not so, and one who will study them can learn much. Knowing that much time has been given to the compilation of these facts, and that in Massachusetts especially they are far above the average in accuracy and fulness, I have thought it might be worth while to spend a quarter of an hour in considering what our statistics can tell us.

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[1] Read before the Boston Society for Medical Improvement, April 29, 1895.

Birth. — After getting the patient's name the first question asked is, Where was he born? This question is usually answered correctly and it is now common knowledge that the foreign born give a much larger percentage of insanity than the native born.

This has been for years a special subject of research in compiling the United States Census, and the fact is repeatedly pointed out by those writing on the subject. The figures, as given in the Census of 1880, are as follows: Of the native population 1,509 to a million are insane; of the foreign population 3,881 to a million, or more than double proportionately. This excess is striking, and may well cause us to ask if immigration ought to go on unrestricted.

But it has been pointed out that the foreign-born population is composed more largely of adults than the native population, and it is, of course, from the adults that the most insane come.

It will be evidently more fair to contrast those portions of the native and foreign born of the same ages.

If we consider the population who are above fifteen, Mr. Wines has pointed out that of this portion 1 in 354 of the natives are insane, of the foreign white 1 in 235, of colored 1 in 612. In other words, the foreign born really show an excess of 50 per cent. among the insane instead of over 100 per cent. It is probable that this proportion would be reduced even more were we to disregard on the other hand all those over seventy years of age.

Age. — In taking our history, having noted the place of birth, we ask the age. And upon this point the statistics are very ample and fairly accurate. The ages at which insanity begins have been tabulated for the entire United States for ten years in the Census of 1880. This shows that insanity is most likely to occur between thirty and forty; that is, a larger proportion become insane; absolutely more become insane between twenty and thirty. Dividing the entire population into eleven groups, with reference to their age, by decades and then dividing the insane population into a similar series, classifying them by the age at which they were attacked, we find the following interesting table.

Let us assume arbitrarily that all mental trouble beginning before the age of ten is idiocy and not insanity (for statistical purposes). It is found that 10,115 of the 91,959 insane living in 1880 became so between the ages of ten and twenty. Dividing the entire population who in 1880 were between ten and twenty years of age by the number of insane who became so in that decade we get a ratio of 1 to 1,060. The same ratio for

20 to 30 is	1 to 314
30 to 40 is	1 to 266
40 to 50 is	1 to 302
50 to 60 is	1 to 408
60 to 70 is	1 to 473
70 to 79 is	1 to 476
80 to 89 is	1 to 496
90 to 99 is	1 to 632
100 and over	1 1,338

It will be noticed that the ratios for 60 to 70 and 70 to 79 are practically the same.

The total average ratio excluding the population under ten years is 1 to 399.

That is, not until we reach the age of one hundred does the ratio became as small as between ten to twenty, and the ratio increases slowly from the age of thirty to ninety.

This ratio is probably not the accurate one; but, so far as I can learn, is the only available one, since the census is taken only once in ten years, and we must depend on institutions for our statistics regarding the insane. If we should add to the number of insane the idiots, we would find the ratio of the two classes to the entire population, instead of 1 to 399, larger; namely, 1 to 296.

It is interesting to note in passing, what the compilers of the census have pointed out, that the bulk of the defective classes meet with their misfortunes at an early age.

Insanity is largely a disease of middle life; 42.5 per cent. of all insanity begins between the ages of thirty and fifty, while only 20 per cent. of the population are between thirty and fifty. I should state here that absolutely more people became insane in the decade twenty to thirty than in any other.

Sex. — In the matter of sex our statistics are unquestionably more accurate than in any other point. Some years ago, in examining this item in the statistics of Massachusetts, I was struck with an apparent paradox — every lunatic hospital in the State reported receiving more male than female patients, every hospital reported having on hand at the end of the year more females than males. How could this be? If true, what is the explanation?

Investigating this question on a larger scale I have been surprised at the result.

Turning to the statistics for the United States, I find that in 1880 there were in the country, both in and outside of hospitals, 44,391 insane men and 47,568 insane women, or 1,071 women to every 1,000 men.

We also find, in the official census returns, that the insane are in the ratio of 1,833 to a million inhabitants; the insane males are 1,739 to a million male inhabitants; and the insane women are as 1,931 to a million female inhabitants.

This excessive proportion of insanity among women has been apparent in our own State for a long time.

Taking the figures of our State Board of Lunacy and Charity, which I believe to be extremely accurate, I find in 1892 there were in hospitals 1,069 women to every 1,000 men; in 1893, 1,149 women to every 1,000 men; in 1894, 1,169 to every 1,000 men. In 1894 the Board made a more complete tabular report of the insane, giving all those in almshouses, etc.; and in this total number the excess of women is even greater still, being 1,208 to 1,000.

To a superficial critic it would appear to be proved that insanity is more prevalent among women, and the inference would be made, as indeed it often is, that women are more apt to become insane than men. According to the United States Census, in the nine years, 1880 to 1889, in every State of the Union (with but three exceptions, namely, Alabama, Mississippi and Tennessee) more men were committed to hospitals for the insane than women — not only absolutely but relatively more in proportion to the population of the two sexes. In the three States, Alabama, Mississippi and Tennessee, where it happened according to the census returns that relatively more women than men were committed to a hospital, this difference was so slight as to make the proportion between the two sexes practically even. But I think that in this point as in many others of our statistics the figures for the State of Massachusetts are so much more accurate that deductions from them are even more trustworthy than those from the much larger ones of the whole country.

In studying reported admissions there is a frequent source of error owing to transfers from one hospital to another being counted as admissions. If a new hospital or ward for chronic cases is opened statistics show an apparent increase. In Massachusetts our State Board has avoided this error by tabulating seven hospitals separately — excluding the Worcester Asylum and the wards at Tewksbury and Bridgewater, where insane patients are admitted only by an order from the Board of Lunacy and Charity.

During the past fifteen years 25,328 cases were admitted to the seven public hospitals of Massachusetts. In 24,639 the sexes tabulated — 12,632 males and 12,007 females, or only 950 females to 1,000 males. And yet we have just seen that at the end of this period in the entire insane population of the State in public institutions, or under the care of the State Board, there were 1,208 insane women to every 1,000 insane men. These include those who have been transferred to the Worcester Asylum and the wards at Tewksbury and Bridgewater. So that we find in Massachusetts, what is probably true in other communities, that the males are more susceptible to insanity. To put it another way, Massachusetts, with an excess of females over males of 5.8 per cent., receives in her hospitals for the insane 5 per cent. less women than men. Régis states, in his "Manual of Mental Medicine," that in the general statistics of alienation the male sex figures more largely than the female: the proportion being 114 to 129 males to 100 females. Reversing the proportion to conform with that in this paper, 775 to 887 females to 1,000 males.

It appears to be clearly demonstrated that more men than women become insane. It is in evidence that there are many more women now insane (in our institutions, at least) than men. It remains to be inferred that women stay in the hospitals longer than the men.

But can this inference be verified?

Fortunately, we have not far to seek for proof of this matter; our Massachusetts Board publishes a carefully prepared table showing the hospital residence, in months, of cases died and recovered. In a series of 5,307 recovered cases reported from the seven public hospitals during the past fifteen years the average hospital residence of the women was exactly one-fifth larger than that of the men — or at 7.68 months for women to 6.4 months for the men. In a series of 4,922 deaths in the same hospitals for the same period, the hospital residence of the females was 16.3 per cent., or one-sixth longer than that of the men, or 33.93 months for women to 29.19 months for men.

That death comes sooner to the men is in accord with what observing medical men have repeatedly noticed. Women are usually more enduring of illness than men, and succumb less promptly than the "stronger sex." It would seem that they recover from insanity less quickly; but the statistics in this same table show that while the *hospital residence* for recovered women is longer, the whole duration of the illness is actually one-sixteenth longer in men. But as it is the hospital residence that affects our statistics, the apparent paradox is explained.

There are other reasons to explain shorter residence for recovered men that cannot be found in statistics. The man is more often the wage-earner, and his services are more imperative for the family, and the physicians are urged to let him return home as soon as possible. Male patients, again, are more often alcoholic; and as soon as the alcohol is eliminated, recovery is rapid.

Régis states that the pure insanities are more frequent among women; that is, if we take out the cases of alcoholism and general paralysis, the excess of males among the insane disappears, and it is the women who are in excess.

Residence. — The place of residence appears to have an effect upon the causation of insanity; and it is generally believed that city life is a factor in causing insanity. Our State Board does not furnish statistics on this point; but through the courtesy of the officers of that board I am able to present some figures on this subject. I am indebted to Dr. Arthur C. Jelly, for collecting with great care and pains the data for this point.

During the years 1892, 1893 and 1894, there were admitted to the seven public hospitals in this State 5,812 cases assigned as follows:

1,850 from Boston.
2,114 from 19 other cities having in 1890 over 20,000 population.
908 from 52 cities and towns having in 1890 less than 20,000 and more than 5,000.
940 from 279 towns having in 1890 less than 5,000.

Estimating the population of these various groups of towns for the year 1893, the middle of the three years covered in this count, we find the annual rate of commitments, per thousand of the population, to be as follows:

For the State	.794
City of Boston	1.265
Cities over 20,000	.778
Cities and towns, 5,000 to 20,000	.605
Other towns less than 5,000	.571

Thus we see in Massachusetts, that in Boston the annual occurrence of insanity is twice as great as in towns of less than 20,000; that the rates for country regions and small towns are practically the same.

May it not be that this difference is due to the foreign population in the cities? While this undoubtedly has some effect, it probably is not altogether responsible for it, as statistics in Europe show a marked increase of insanity in urban districts over rural. It is probably true that the cities contain a larger proportion of middle-aged people than the towns, who, as we have already found, are especially liable to become insane.

But when we remember that in the United States nearly 30 per cent. of our population are now urban against only 3 per cent. a century ago, we must realize that a great social change has taken place. The sudden changes in the habits of our people amount to a social upheaval; and the increase of insanity is merely one of the incidents of this state of affairs, and is a very interesting social problem, the discussion of which in this brief statistical paper is out of place.

My aim has been to put in a few words the few facts relative to insanity that statistics can show — matters that are so elaborately prepared and so seldom available for the busy man.

TESTIMONIAL TO SIR JOSEPH LISTER.— Sir Joseph Lister was presented on July 30th with his portrait, painted by Mr. J. H. Lorimer. The presentation was made at a meeting held at King's College Hospital by Sir John E. Erichsen, President of University College.

Clinical Department.

THREE UNUSUAL SURGICAL CASES.[1]

BY JOHN HOMANS, M.D.

I. STONE IN BLADDER IN A GIRL OF FIVE.

NUCLEUS, a very sharp-pointed pin, removed by lithotomy through the base of the bladder. Cure.

I saw on the 1st of March, 1894, in consultation with Dr. Hazelton, at Wellesley Hills, L. L., a stout, healthy girl, who had been suffering for some weeks from frequent and painful micturition. On examination with a catheter, a stone was felt in the bladder, and soon afterwards the patient entered the Massachusetts General Hospital. Urination was very frequent and agonizing, and was accompanied by screams. The urine contained pus, a large trace of albumin, uric acid, urate of ammonia and triple phosphate crystals. On March 23d the child was etherized and an attempt made to dilate the urethra and crush the stone with the lithotrite; but the stone was large, the bladder small, and it seemed to me more intelligent and more surgical to cut through the base of the bladder and remove the stone entire. I was very glad that I did so, for the pin that was the nucleus of the stone, might have been a difficult thing to have pumped out in the evacuator, and if it had not been removed, another calculus would have formed. The vagina was only large enough to admit my little finger, and using the finger as a guide, I cut upwards through the base of the bladder with a curved sharp-pointed bistoury upon the stone, and removed it with forceps through the opening. I washed out the bladder, and tried to sew up the vesical opening; but the vagina was so small that I could not pass the sutures intelligently, and I contented myself with placing a Sims self-retaining catheter in the bladder. The stone was ovoid in shape, one and a half inches long by one quarter of an inch in width, and weighed one hundred grains.

I should not have troubled the Society with the report of the case except for the very remarkable nucleus that the stone presented, and which accounted for the very frequent and painful attempts at micturition. From the smaller end of the stone projects the very sharp and polished point of a brass pin, and it was the pain caused by the pricking of the bladder, particularly when it contracted, that had given rise to the suffering and screaming. How the pin got into the bladder is a mystery, but probably the child herself inserted it in some way. In the course of a few months the opening spontaneously closed, and the child is now (April, 1895) robust and well.

II. REMOVAL OF A BRASS SAFETY-PIN FROM THE RIGHT PRIMARY BRONCHUS.

W. H., three years old, entered the Massachusetts General Hospital May 28, 1894. A week before, while lying on his back with a closed safety-pin in his hand above his face, he suddenly dropped the pin into his mouth. He choked, and his mother tried to remove the pin with her finger. He coughed somewhat, and his breathing became wheezy. His parents brought the child to the hospital, but would not leave him. On May 28th he entered the hospital, with rapid respiration and breathing with difficulty.

Attempts were made in the laryngological department to remove the pin which was seen in the larynx, but these attempts were unsuccessful. The child was etherized and an incision was made into the larynx, but the pin had gone downward. After considerable search the pin was extracted by means of long, curved forceps from the right primary bronchus. A tube was put in the trachea and the breathing became quiet. Convalescence was slow, but at the end of a month the child was discharged well.

III. LAPAROTOMY FOR ONE HUNDRED AND TWENTY CHERRY-STONES AND SEVENTY PRUNE STONES IN THE SIGMOID FLEXURE.

In the spring of 1893, Dr. Norris, of Cambridge, sent to the hospital a man, twenty-seven years old, suffering from frequent attacks of constipation and pain in the abdomen, which no treatment had relieved. He stated that ten years before, while in Denmark, he had eaten a great number of cherries and prunes and had swallowed the stones, and that none of them had passed through his bowels. He had consulted many physicians, but his statement about the stones had never been credited. On etherization a tumor was found in the right iliac region; and on succussion the rattling of small, hard bodies was heard. The abdomen was opened over the tumor, and the greatly distended sigmoid flexure came into view. Its walls were greatly hypertrophied, and the stones were plainly felt and heard within it.

In the left and central pelvic cavity was a hard and flattened tumor, surrounding and involving the lower part of the sigmoid flexure and the upper part of the rectum, estimated to be about seven inches long, by three inches wide, and two inches thick, and was considered by me to be a malignant growth involving the sigmoid flexure and its surroundings. It was impossible to make a resection. The bowel was brought out through the wound, a glass rod was passed beneath it, and the external wound closed above and below the gut. On the third day, that is, forty-eight hours later, the gut was opened and several stones came out. Much fecal matter and some stones were found at every dressing of the wound, and in the course of four days one hundred and twenty cherry-stones and seventy prune-stones were found. They were very black in color, but were otherwise unaltered.

I saw the patient in December, 1894, twenty months after the operation. He had gained flesh and strength, and was working every day. He uses a contrivance of his own to retain his feces.

I will not report the case more at length to-night, as it has been already published in the *Annals of Surgery* for 1894, Vol. XIX, p. 672.

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Medical Progress.

REPORT ON RECENT CASES AT THE INFANTS' HOSPITAL, BOSTON.

BY T. M. ROTCH, M.D. AND A. H. WENTWORTH, M.D.

A DESCRIPTION of a few of the cases which have been treated at the Infants' Hospital during the past winter, with their autopsies, cannot fail to be of some interest.

CASE I. K. C., female, five days' old. Said to have been premature at eight months.

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[1] Read before the Boston Society for Medical Improvement, April 29, 1895.

Clinical Diagnosis.— Not made.

History.— No history could be obtained from the person who brought the infant to the hospital, relative to the family, or the child, except that the latter was premature and had not been able to nurse well.

Physical Examination.— Ill nourished. Marked icterus, otherwise skin negative. Extremities cool. Color cyanotic. Considerable apathy. Extreme weakness. Umbilical cord still adherent, without evidence of inflammation about it. Temperature subnormal, pulse 144, respirations 50. No contractures, or rigidity of extremities. Lungs, heart and abdomen negative.

Clinical History.— Vomiting occurred a few hours after entrance, and persisted at intervals until the infant's death. The vomitus was of a brown color and resembled "coffee grounds." Microscopical examination failed to detect blood corpuscles and Teichmann's test for hemin crystals was negative. Gmellin's test for bile pigment was unsatisfactory. Heaters were placed about the infant, and he was given a weak, modified milk, by dropper, with brandy. Death occurred about twenty-four hours after entrance, no definite diagnosis having been made. There were no convulsions at any time, and no other symptoms than collapse, stupor and vomiting. The temperature remained subnormal, and the respiration just before death became slow and irregular. The child died quietly.

Autopsy.— Diagnosis, cerebral hemorrhage. Skin icteric. Lungs normal. Thymus gland normal. Heart imperfectly contracted and filled with semi-fluid blood. Liver about normal size and congested. Spleen small, normal structure. Kidneys contained uric acid infarcts. Stomach capacity 50 c. c., partly filled with thick fluid of a greenish tinge which gave the reaction for bile with nitric acid. Intestines normal. Umbilical arteries and vein collapsed and not abnormal. Mesenteric and bronchial glands normal. Brain convolutions somewhat flattened. On under surface of cerebellum and pons there was considerable clotted blood. The right lateral ventricle and third and fourth ventricles were filled with freshly coagulated blood, and the choroid plexus was involved in the middle of the clot. There was no pigmentation of the brain substance and no evidence of trauma on the scalp or skull.

Aside from the etiology of the hemorrhage, which could not be determined, the case is of interest from the absence of marked cerebral symptoms. That such an extensive hemorrhage into the brain could occur without convulsions, or even unconsciousness, appears remarkable and is of diagnostic value. As for the etiology, there were no evidences of infection, or syphilis, or other disease and the cause of the hemorrhage could not be determined.

Case II. S. L., male, five and one-half months old. Entered hospital February 25th, and died ten weeks later.

Clinical Diagnosis.— Congenital malformation of heart.

Family and Previous History.— Father and mother were Polish Jews, and no history obtainable except that the infant had always been cyanotic and weak.

Physical Examination. — Undeveloped and fairly nourished. Tongue and lips cyanotic, and skin of a dusky color. Pulse and respiration rapid. Veins of neck somewhat distended. Cry fairly strong. The heart impulse was scarcely palpable in fourth space, mammary line, on left side. Dulness began in second space on the left of the sternum and extended downwards to the fourth rib. Horizontal dulness at the level of the fourth rib extended to the right of the sternum and was lost in the liver dulness below. A blowing systolic murmur was heard loudest in the third space and over the fourth rib on the left of the sternum near its border. First sound audible with the murmur. Second sound sharp and louder than the first. At the base the sounds were louder over the pulmonic area than over the aortic. In the second space on the left of the sternum, between the mammary line and axilla, the systolic murmur replaced the first sound. Murmur not transmitted to the back. Heart's action rapid but regular. The lungs were negative. Liver dulness began in the fourth space, para-sternal line, and continued downwards to below the border of the ribs and outwards to the axilla. Edge of the liver palpable one and one-half inches below the border of the ribs, in the mammary line. Spleen not palpable. Abdomen negative. Weight 4.430 kilogrammes.

Clinical History.— The infant's condition improved during the following two months. His appetite was fairly good. The average daily quantity of modified milk taken was 700 c. c. The dejections were well digested, with a tendency to constipation. The temperature remained normal the greater part of the time. The color varied from time to time, but always retained its 'dusky' hue. The pulse varied between 120 and 200 beats in the minute, the respirations between 30 and 80. He gained in weight slightly (about one pound). Aside from an acute inflammation of the middle ear, which occurred about a month after entrance, there were no noteworthy symptoms until just before his death which occurred suddenly and unexpectedly on May 3d. For two days previously he had been fretful and had taken his food poorly, with some vomiting but no other symptoms.

Autopsy. — Diagnosis, single ventricle and transposition of the arteries. Considerable congestion and edema of the brain, otherwise negative. Liver, spleen and kidneys showed moderate passive congestion. Atelectasis of the lungs here and there, especially of right lower lobe. Small quantity of serous fluid in pleural and peritoneal cavities. Thymus gland normal. Stomach capacity 220 c. c.

The heart was two or three times its normal size. The measurements were as follows: longest diameter of the ventricle, from above downwards, externally, 6.5 cm.; from the auriculo-ventricular groove of one side to that of the other around the apex, 13 cm.; horizontal circumference of the ventricle, near the middle, 16.6 cm. The larger part of the heart lay to the right of and behind the sternum, the apex on the right side. On section, there was a single, large ventricular cavity, with hypertrophied walls. Both the aorta and pulmonary artery led from this, lying one behind the other. The vessels were transposed so that the aorta was uppermost, and both vessels were directed upwards and to the left. At the upper part of the ventricle there was a fibrous septum 2 cm. by 3 cm. in size, which was attached above, between the orifices of the aorta and pulmonary artery, and on either side to the heart muscle, leaving its lower border free in the ventricular cavity. This septum served to divide the blood as it was pumped out of the heart during systole, so that part flowed underneath into the pulmonary artery and part flowed above into the aorta. The upper surface of this septum formed the floor of a small space, bounded by the heart muscle, which communicated with the right auricle, so that the blood from the right auricle flowed across this septum and then downwards into the ventricle. The left auricle led directly into the ventricle at the lower part. Thus the blood from both sides of the heart became mixed in the single large ventricle, and with each systolic contraction was pumped alike into both vessels. The foramen ovale and the ductus arteriosus were not patent.

Notwithstanding the complete admixture of arterial and venous blood the clinical symptoms were not so marked as one might have expected. There was never any dyspnea, simply the variation in color, pulse and respiration at times, and those were not noticeable in the child's condition. Probably the marked cardiac hypertrophy and the absolute quiet were sufficient for compensation.

Case III. Male, nine weeks old. Entered hospital March 4th, and died three days later.

Clinical Diagnosis. — Infantile atrophy.

Previous History. — Breast-fed for three weeks, and then had milk and lime-water. One week before entrance he was said to have had diarrhea and vomiting.

Physical Examination. — Ill developed and very marked atrophy. Skin livid. Face and extremities cool. Throat and mouth negative, excepting anemia of mucous membrane. No enlargement of lymph glands. Heart, lungs and abdomen negative. Spleen not enlarged by percussion and not palpable. Edge of liver palpable just below border of ribs in the mammary line on the right; dulness began in the fifth space above, in the same line. No evidences of syphilis or rhachitis. Weight 3.300 kilogrammes.

Clinical History. — The infant was given modified milk and brandy every two hours, and heaters were placed about him. He took nourishment poorly, and as the heaters seemed insufficient to warm him, he was put in an incubator. The dejections were constipated. The temperature remained subnormal (36° C.). He died suddenly and quietly on the third day.

Autopsy. — Diagnosis, infantile atrophy. Body extremely emaciated. All the organs were normal. Thymus gland extended from just below the larynx, lying on the trachea and bronchi at their bifurcation, downwards over the right auricle. The mesenteric glands were not as large as they ordinarily appear in these cases. The bronchial glands were not discernable without searching for them.

Case IV. Female, eighteen months old. Entered hospital March 18th, and died three days later.

Clinical Diagnosis. — Pulmonary, glandular and miliary tuberculosis.

History. — Father died of tuberculosis. This child was a twin, and was smaller and weaker than the other one. Breast-fed until fifteen months. Said to have been well and plump until she was weaned, except that she never sat up well. Was able to stand with the aid of a chair, but never walked. During the last four months she showed progressive loss of flesh and increasing pallor. Her appetite was poor, and she was constipated.

Physical Examination. — Ill developed and extremely emaciated. Scarcely audible cry. Puffiness of eyelids. The alæ nasi moved with respiration, and she breathed with her mouth open. Tongue and lips dry. There were two upper and lower middle incisors and four molar teeth. Frontal and parietal eminences prominent. Anterior fontanelle on same plane as the bones, two-and-one-half inches in diameter antero-posteriorly and two inches laterally. General glandular enlargement in the neck and under the lower jaw. Skin mottled and extremities cool. No evidences of rhachitis in the epiphyses or ribs. Tonsils hypertrophied. Percussion over both backs of the lungs less resonant than normal in most places. Below the spines of the scapulæ, toward the inner borders, were areas of dulness, with bronchial breathing and increased voice sounds. These signs of consolidation were more marked on the right side. There was a small area of broncho-vesicular breathing in front on the right side over the fifth rib, in the mammary line. The heart sounds were feeble. Cardiac dulness obscured by tympanitic tone. Liver dulness began at sixth rib, mammary line, and gave place to tympanitic tone below. Edge was not palpable. Spleen not palpable. Abdomen distended and tympanitic everywhere, palpation negative. Percussion over the upper part of sternum and in second space on either side was resonant. Weight 4.950 kilogrammes. Temperature 38.8 C., respiration 60, pulse 140.

Clinical History. — The child took nourishment poorly; breathed with some difficulty; was extremely weak and died on the third day without other symptoms. The temperature varied from 38.8° to 39.0° C. until death.

Autopsy. — Diagnosis, "cheesy," tubercular pneumonia, glandular tuberculosis, miliary tuberculosis. Marked emaciation. There was a chronic tuberculous pneumonia of both lungs in the vicinity of the entrance of the main bronchi, showing on the posterior and inner surfaces of the lungs as yellow, homogeneous, dry, "cheesy" areas about two inches in diameter. The bronchial glands formed a large packet around each bronchus, many of them "cheesy" on section. There was a subacute miliary tuberculosis of both lungs, the individual tubercles being about the size of two millet-seeds, and more opaque than usual. The lungs felt as if filled with small shot. A few tubercles were found in the walls of the pulmonary veins. Miliary tuberculosis of the liver, spleen and kidneys. Mesenteric glands enlarged but not "cheesy." Intestines normal.

It is interesting to compare these last two cases. Both were extremely emaciated, and were not unlike in their clinical symptoms, and might well have passed for infantile atrophy. The age of the latter, the glandular enlargement, the elevation of temperature and the physical signs in the lungs enabled us to make a correct diagnosis. In uncomplicated infantile atrophy the temperature is almost always inclined to be subnormal and the lymph-glands are rarely enlarged. The physical examination of the organs, as a rule, is negative.

Case V. Female, three months old. Entered hospital April 4th, and died six days after entrance.

Clinical Diagnosis. — Tubercular meningitis.

History. — Child brought by a friend, with no history except that she was said to have fallen out of bed three weeks before and to have struck her head. Since then she had slept a great deal and cried when moved. Said not to have moved the left leg and arm as much as the right.

Physical Examination.— Fairly developed, ill nourished. Extremities cool. Considerable stupor. Some retraction of head. No pain on pressure in the back of the neck. Fontanelles and sutures open. The sagittal suture one and one-half cubic centimetres wide, and the coronal and lambdoid sutures open their entire length. The dura was felt to be tense and resistant but without pulsation. The head was broad below the parietal eminences. Pupils were equal and reacted slowly to light, followed by dilatation of the left one. There was a slight purulent discharge from the right ear. Tongue coated; throat normal. No glandular enlargement. The left arm and right leg were slightly flexed, and showed some resistance to passive movements. Moderate ephiphyseal enlargement at the wrists and slight "rosary" on the ribs. The abdomen was slightly retracted, and there was a well-marked *tâche cérébral.* Lungs negative. Slightly diminished resonance behind upper part of sternum. First heart sound not clear, but without a distinct murmur. Spleen not palpable. Temperature normal, pulse 125, respiration 40. Weight 5 450 kilogrammes.

Clinical History.— The bowels were moved with calomel, and the child was given modified milk and brandy. Nourishment was taken with difficulty, and at times she was fed with a tube. The symptoms of cerebral compression increased. The pupils became dilated and there was marked stupor. The temperature remained between 36.6° and 38.° C. until the day of her death, when it rose rapidly to 42.5° C. The pulse increased in rate, with the rise in temperature, reaching 250; and there was Cheyne-Stokes respiration. Convulsions did not occur until the last day and persisted until death, when not relieved by ether.

Autopsy — Diagnosis, tubercular lepto-meningitis; tuberculosis of the brain, of the glands and of the spleen, liver and kidneys. Covering the base of the brain, over the right hemisphere, was a marked fibrinopurulent exudation; and in the meshes of the pia corresponding to this were numerous gray, slightly opaque granulations. The right side of the brain was pale and extremely softened, as well as could be made out. In the area of the optic tract was a "cheesy," yellow, opaque mass the size of the end of the finger. The left lung was normal. The right lung was adherent to the chest wall, just outside the nipple; and beneath this was a small, consolidated area of opaque, "cheesy" material, more or less granular and softened. The bronchial glands were much enlarged and filled with opaque, "cheesy" foci. The heart was normal. Spleen, liver and kidneys contained a few scattered, opaque, yellowish points. The mesenteric glands were enlarged in the same way as the bronchial glands. Stomach capacity 240 c. c.

It is interesting to note the occurrence of tubercular meningitis at such an early age. The tuberculous glands must have existed for some time.

An International Congress of Applied Chemistry will be held in Paris next year. A preliminary programme of the sections has been drawn up for consideration. They are to be ten in number and will cover the entire field of industrial chemistry.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. G. MUMFORD, M.D., SECRETARY.

Regular Meeting, April 29, 1895, the President, Dr. Clarence J. Blake, in the chair.

Dr. John Homans reported

THREE INTERESTING SURGICAL CASES.[1]

Dr. E. B. Lane read a paper on

STATISTICS CONCERNING INSANITY.[2]

Dr. P. C. Knapp: I have listened with very great interest to Dr. Lane's paper. He seems to me to have extracted out of the muddle of statistics a good deal of very useful and valuable information. However, one of the fundamental weaknesses of all of the statistics that are tabulated is that they regard insanity as one general disease, and the statistics which are to be gathered concerning insanity when treated in that way are as full of fallacy as statistics would be if we should group together pneumonia, pulmonary tuberculosis, bronchitis and pleurisy and try to deduce statistics from the whole lot of them together. The idea that they are dealing with different diseases has not dawned yet upon the minds of our most intelligent public boards who regulate the affairs of the asylums. In regard, for example, to the greater amount of insanity among the urban population in distinction from the rural, there are two very important factors, namely, alcohol and syphilis, which are very much more frequent in the cities than in the country. In cases, for example, of general paralysis, we know the extreme importance of syphilis in the causation, but, of course, in no tables of statistics that are collected on any of the schemes which are laid down by the State boards, can the important facts in regard to general paralysis be shown. The modern ideas with regard to acute hallucinatory confusional insanity show that age and acute infectious diseases have a distinct influence in the causation; there, again, the tables of statistics give us absolutely no help.

Then, in regard to the question of heredity which Dr. Lane in his paper has barely touched upon, we know by the collection of individual cases that heredity is a very much greater factor in certain forms than it is in others. Not knowing just what line Dr. Lane would take in his paper, I was glancing to-night at some of Mendel's statistics. I noticed that in insanity in general he found that heredity was a factor in the causation in about 56.5 per cent.; in paranoia it was almost 60 per cent.; while in general paralysis it was 34.8 per cent. Such points as those show how fallacious are the tables which the State Board of Lunacy and Charity compel the superintendents to fill out; and I was very glad to hear Dr. Lane's criticism of the board's table of the causes of insanity. Of course, there are some of the tables published in the reports of the asylum which are of distinct value. There are others which seem to me to be entirely a waste of time as they are at present conducted.

There are very many other questions suggested by this subject; as the influence of heredity in general on insanity, and the question as to the increase in insanity in this country and in other countries in the last few years; but they are perhaps a little foreign to the present paper.

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[1] See page 164 of the Journal.
[2] See page 161 of the Journal.

Dr. Tuttle: The statistical tables thus far considered by Dr. Lane are no doubt sufficiently accurate, and the conclusions deduced therefrom reliable, since the sex, age, birth-place, and residence of most patients can be ascertained with approximate certainty. But some of the remaining tables published by the Massachusetts hospitals for the insane are not accurate, because of the nature of the circumstances considered; and any conclusions drawn from them would be of little value. Take, for instance, the table of causes: It is often extremely difficult to determine the causes of insanity in any given case, and nearly always almost impossible to express them so briefly as to admit of their tabulation. It is usually a very complex matter. There must be a certain mental inheritance, a predisposition which renders it possible for ordinary causes to be effective. I do not mean by this a direct inheritance of insanity in every case, but rather the possession of such a nervous organization as renders one liable to be insane. Most people cannot become insane from any cause; while some will lose their mental balance under the ordinary conditions of life. Beside such a predisposition, a great many circumstances may have contributed, and should be included as causes. It would be nearly impossible to express the truth, even if one could ascertain it, in the form of a table.

I think that ordinary insanity is about as frequent in one sex as the other, and the reason why more women than men are in our hospitals is that the men either die or get well sooner. Leaving out cases of general paralysis, which is much more common in men, the numbers are nearly equal.

The influence of change of surroundings and circumstances is well shown by the fact that people of foreign birth furnish, in proportion to their number, 50 per cent. more cases of insanity than the native born. The removal to another country and the struggle for existence under new conditions no doubt have much to do with the causation of their insanity. This is also the case with the negro. In the days of slavery the percentage of insanity was much greater among the free negroes of the North than among the slaves. Since emancipation, insanity has greatly increased among the negroes of the South. With liberty have come cares and anxieties incident thereto, and in some cases license, which may be responsible for the increase of general paralysis among them. The vices of civilization are responsible for much of the degeneration of man. Insanity is a degeneration, and, as a rule, is a matter of slow growth. Occasionally people suddenly become insane from shock; but usually it is the culmination of a long process, extending over months or years.

Dr. Stedman: Dr. Lane has taken just the subjects to which statistics lend themselves best in studying the causes of insanity. This matter of the tables of the causes of insanity has, by the way, been brought up more or less often for the last twenty-five years, and yet we find the same tables published regularly. In England the causes are assigned by the physicians themselves after inquiry from the relatives, and are not taken from the commitment papers. Although the mass of statistical tables on insanity is generally of little value, I think Dr. Lane will agree that he has got considerable help from those of Massachusetts. We nowadays turn to the tables of statistics of our State with some satisfaction, whereas we get little aid from those of any other State or country, with the exception perhaps of England and Scotland. But, of course, even ours are faulty; and after one has worked in an asylum over the preparation of these tables for the annual report he is apt to get rather disgusted with them, but they are, nevertheless, very valuable in certain directions. I have often been asked regarding syphilis as a cause of insanity, particularly by physicians; and it does not seem to be generally recognized that as a cause of pure, functional insanities of psychoses, syphilis itself is very rare, while on the other hand, it often prepares the way for general paralysis and other *structural* forms of mental disorder.

I was a little surprised at Dr. Knapp's statement that 33 per cent. of the cases of general paralysis were found by Mendel to be hereditary. Years ago I examined many patients at Danvers with that in view, have seen a large number of opinions and statistics bearing upon it since, and should place the proportion of hereditary cases a great deal lower. Age is an extremely important cause in insanity, especially that most critical time of life, adolescence. It is unfortunate that all our statistics as to ages are invariably drawn up in the regular decades of ten to twenty, twenty to thirty, thirty to forty years, etc.; for it is impossible by this means to ascertain the facts regarding this important period (between fifteen and twenty-five) of puberty and adolescence. If we eliminate the cases of complicated mental disorders of all times of life, such as the toxic and focal insanities and the puerperal state, in which age as a cause has no direct bearing, it will be found, and Dr. Tuke has referred to this, that quite a large proportion — half, it is safe to say — of all such cases of insanity occur in adolescence for the first time. A great deal, on the other hand, is made of the menopause as a cause of insanity; while a close inquiry into the matter will, I think, show that actual insanity caused by the change of life alone is comparatively rare, whereas a host of purely *nervous* states may accompany this change.

Dr. Knapp: If I might be permitted to add one more word in answer to what Dr Stedman has said: the figures I gave were merely for the purpose of comparison, as showing the alleged influence of heredity in two or three different forms of disease, namely, paranoia, insanity in general and general paralysis. Those were Mendel's figures published in his work on general paralysis in 1880. The earlier writers on general paralysis put the percentage of cases in which there was some nervous or mental heredity as very great, 60 per cent. to 65 per cent. It has been steadily declining, so that Meckel's figures give about 20 per cent., and that is, I imagine, a good deal nearer the truth. In this whole question of heredity there are some very important features which have not been discussed at all. In the first place, as many gentlemen know, the work of Mr. Galton and Weismann cast considerable doubt on the whole question of heredity. In the second place, comparatively few statistics have as yet been collected to show the amount of abnormal nervous heredity in so-called healthy people. A recent paper by Koller, in the *Archiv für Psychiatrie* (xxvii, 268), gave statistics seeming to indicate that there is almost as large a percentage of so-called neuropathic taint among healthy people as among the insane. Another factor, which bears out what I said before, is that when we speak of an insane heredity we entirely ignore the form of insanity in the relatives; and we are very apt to ignore the closeness of the relation. We must bear in mind that in the case where insanity occurs in a grandparent, for example, the individual in question has in his veins, on an average, only one-fourth of the blood of that grandparent. Then, again, if we find a case of insanity in the relatives of our patient, it makes a very great difference whether that insanity is general paralysis, which, in all probability was due to syphilis acquired by that relative at some period in his life, or whether it was a traumatic insanity due to some injury he had received, or alcoholic insanity, or some form of insanity which pointed more clearly to degeneration such as paranoia. The figures which I cited, which Dr. Stedman has criticised, were figures of old date and given simply as an illustration.

Dr. Lane: The gentlemen who have discussed the paper seem to be aware of the obstacles I met in compiling this paper. I spent several hours in digesting statistics that I did not dare to bring before you because they were unreliable, and the means of studying the subject further were so imperfect, I found I could not bring anything of value.

The matter of diagnosis of insanity is our most urgent need for the further study of the subject. Scarcely two men in this State would agree on a table of diagnosis of insanity. Until our State Board of Lunacy and Charity has a preponderance of men interested in the subject, I do not think we can get correct statistics. The State board is the only authority which can compel the asylums to classify their cases according to a fixed nosology.

Speaking of the faulty statistics and decades, it is a point I ran across in getting hold of these figures, and getting the ages of the insane. It is curious the irregularity with which the ages are given. In giving the ages it seems to be a custom to approximate the even numbers, and the even numbers are one-fourth to one-fifth larger than the odd numbers, so that the only way to do is to take a decade. The statistics of 1890 show 78 per cent. more insane in our institutions than in 1880. The more hospital accommodations there are, the more willingly do people send their insane into the hospital.

SPECIMENS.

Dr. Homans showed a beautiful specimen of adeno-carcinoma of the uterus, removed by vaginal hysterectomy; an ovarian tumor; and also a hairy mole, or birth-mark, about two and one-half inches in diameter, removed from the face of a girl of eight. The mother was said to have been frightened by a dog while pregnant, and this spot with a reddish-brown base and covered with black hair resembling fur was found on the region between the malar bone and the left ear, and a portion of it was hypertrophied and filled with sebaceous glands. The affected skin was dissected out and so much of the cavity as could not be covered by approximation was covered with a Thiersch graft taken from the thigh.

The American Academy of Railway Surgeons will meet in Chicago on September 25th, 26th and 27th.

Recent Literature.

A Monograph on Diseases of the Breast, their Pathology and Treatment, with Special Reference to Cancer. By W. Roger Williams, F.R.C.S., late Surgeon Western General Dispensary, and Surgical Registrar, Middlesex Hospital. With 76 figures. London: John Bale & Sons. 1894.

This book is essentially a scholarly one. The first chapters of the monograph are devoted to the Ontogeny, Phylogeny, Morphology, Anomalies and Histology of the Breast. Then the author takes up the various conditions governing the growth, disseminations and life-history of cancer in the male and female. The differential diagnosis is carefully considered, and the treatment of cancer is also fully set forth.

The author evidently believes in a thorough operation, and strongly emphasizes the necessity for the complete removal of all cancerous growth. We personally believe that Halsted's method of operating for cancers of the breast, while extreme, is preferable to that advocated by the author. The author is evidently a believer in antiseptic surgery. The growing custom among American surgeons is to do this class of surgery aseptically and not antiseptically, and the results attained are eminently satisfactory.

The work ends with a reference to axillary tumors, inflammation and suppuration, tuberculosis and syphilis of the breast. The latest statistics as to whether life is prolonged or not by operation are not included in this work, Gross's statistics of March, 1888, being the last reported. In many respects this is a book that we can recommend as a careful analysis of the facts relating to diseases of the breast. The strictly scientific part of the work is extremely well done. The practical conclusions, including treatment, are commonplace. The book is well written, printed and bound, and fairly well illustrated.

The Dynamics of Life. An Address delivered before the Medical Society of Manchester, October 3, 1894. By W. R. Gowers, M.D., F.R.S. 12mo, pp. 70. Philadelphia: P. Blakiston, Son & Co. 1894.

Dr. Gowers's address, reprinted in this convenient form, is, like everything he writes, full of interest and of stimulating thought. He puts before his hearers the problem "Whence and how is motion produced by the muscles, and whence is the mysterious nerve force derived that excites the muscles to contraction?" He discusses the problems of latent chemical energy, and in the energy of the universe he sees nothing but perpetual motion, and that all stimuli are but forms of motion. This motion can be clearly demonstrated in muscular energy, but the nature of nerve force is still unknown. One fact only is certain, it is capable of propagation along a nerve fibre. The hypothesis that the source of nerve force is latent chemical energy, conceived as minute motion liberated and released by added motion is not improbable. Of the relation of this energy to life itself, however, nothing is to be said, nothing is to be discerned, and he can see no promise that the future has anything in store for us. In his whole address he points out the relation of the doctrine of the conservation of force to the problems of the dynamics of life, in a way that is full of suggestion to every thoughtful mind.

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A JUDICIOUS VALEDICTORY ADDRESS.

An address by Prof. H. C. Wood[1] to the graduating class of the Medical Department, University of Pennsylvania, abounds in excellent advice, for men of wider experience as well as for those just entering upon their professional careers.

He urges upon them distinct plans of work and the necessity of bringing to a satisfactory conclusion whatever is begun. "Each day, each week, each month finish something; or at least finish the laying of some bricks in the structure which you are struggling to erect. . . . Circumstances in my youth led me of necessity into botanical work, away from and outside of my profession. I knew that the chapter would be but a comparatively short one in my life; that the work done would be at best but a foundation; but I determined to do something that should be in itself complete; and so I wrote one large elaborate botanical monograph, putting four years of work into it. I knew that it could not bring me direct professional preferment; but I knew that it would bring the reputation of doing work successfully; and that in its doing would be formed the habit of successful effort; and to-day nothing that I have accomplished gives me more satisfaction in the retrospect than does that bit of natural history work."

The secret of professional success is technical fitness, which is twofold in its nature, since it has to do with purely technical skill, and also with the management of the human animal.

The crowning stone of all and the only real excuse for the existence of the medical profession is therapeusis, or the art of healing. In attempting to combat disease, "it is essential that you use your scientific knowledge, but it is equally essential that you strengthen the weak places in the science of medicine by every possible gleaning from empiricism."

The study of individual characteristics should go hand in hand with the study of disease; and, above all, "tact" should be cultivated and perfect self-control. "As Professor Osler said once upon this platform, the medical man needs to have his finger always on his vaso-motor centres; but let me tell you this is but a half truth; the doctor wants his finger at all times and forever on every one of his nerve-centres. Do not dance because your heels want to fly up; do not act because the impulse is upon you; do not talk because your tongue is loose and restless. I have often thought that if there be any portion of the human anatomy which the devil especially inhabits, it is Broca's convolution of the brain, as it is devoted to human speech. Certainly upon this centre put not your finger, but your biggest thumb; for your very life hold it down if you can; sit upon it; do your best, too often it will blow off like a safety-valve."

In conclusion, Professor Wood lays down the code of medical ethics, as follows:

"(1) To consider the doctor as a member of your own family, having an inherent right to your medical services; but to remember yourself not to abuse this right.

"(2) To consider any discovery or any invention you may make as belonging not to yourselves but to the general profession.

"(3) Never in any way to laud your own medical skill or to attempt to supplant in public or private estimation one of the medical household.

"(4) To join yourself as soon as may be to the incorporated companies of your fellows for scientific and social intercourse, and for the cultivation of that professional conscience which often binds men more closely than their personal sense of right and wrong.

"(5) Through good and ill report to stand by members of your own profession, unless they be guilty of moral evil."

◆

THE ACTION OF SMALL-BORE PROJECTILES OF HIGH VELOCITY ON THE HUMAN BODY.

During the recent Chitral expedition Surgeon-Lieutenant Jay Gould, of the Indian Medical Service, made important observations on the new projectile, known as the Lee-Metford bullet, which represents the modern tendency toward small-bore projectiles of high velocity. With considerable difficulty he succeeded in collecting some twenty-five or thirty cases, of which he reports the most interesting in a recent number of the *British Medical Journal.* Owing to the custom of the natives of carrying off their dead from the field of action and burying them immediately, he was able to observe the effect of the bullet only in case of the slightly wounded. In the cases which were studied, the range at which the patients were shot was also unknown. The value of the observations is lessened from both these causes. Nevertheless, he was able to draw important deductions, which will, at least, serve as a nucleus for further observations. In general, the conclusions reached are as follows:

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[1] University Medical Magazine, August, 1895.

That from a humanitarian point of view the Lee-Metford rifle is a perfect weapon.

That the bullet obviously inflicts very little damage on the soft tissues, and that on bones its action is not severe, preferring rather to go through a bone than to badly fracture it.

The writer goes on to say:

> From the little experience I have had in injury to bone tissue by the Lee-Metford bullet, I certainly think it causes but slight shock, and doubt its capacity of putting a man out of action. Instead of badly fracturing and comminuting the bone, it appears only to drill the bone and slightly splinter the edges. A hard bone like the shaft of femur it in all probability would fracture if it hit it fair, otherwise it would groove and glance off it. It apparently has little comminuting action even on the skull bones. How is it that this bullet does, or apparently does, so little harm? Is it that the small diameter, comparatively sharp apex and very hard thimble, combined with enormous spin and velocity, enable it to act as a rapidly working drill, and, consequently, simply bore a hole in the bone?
>
> Very marked indeed is the action of the service bullet compared with Tweedie's, which is used for sporting purposes. In the latter the apex of the thimble is filed off, and its destructive effect on bone is enormous. On several occasions after shooting black buck and chinbara with a Lee-Metford sporting carbine, using Tweedie's bullet, I have dissected the wound, and found that the bones touched by the bullet were literally smashed in all directions.
>
> On the strength of the few cases I have quoted and others still under observation, I infer that the Lee-Metford rifle is an excellent weapon in every respect but one, that is, would it stop a rush?

Another fatal case of gunshot wound with the Lee-Metford bullet is reported by H. Knaggs, M.B., in the same number of the *British Medical Journal.* In this case a careful post-mortem examination was made, the substance of which, with the inferences to be drawn, the writer gives in the following remarks:

> The rifle was discharged at a distance of about ten yards, and the cartridge was loaded with black powder. The course of the bullet was inwards, backwards and downwards. From recent experience one would expect that the discharge of a small-bore projectile with high velocity and at such close proximity would produce effects much more severe and with greater comminution of hard parts than was found in this case. The wound in the spleen, though of small extent, was distinctly "explosive" in character, but the injury to the bone was limited and well defined. Though a considerable portion of the body of the vertebra was destroyed, the wound of exit was hardly larger than the wound of entrance, which is unusual in such cases, especially at short ranges, where the exit of a bullet is often marked by a wound of great extent. The case goes to demonstrate the fact pointed out lately by Professor Horsley, in a lecture given before the Royal Institution, that the destructive effects of bullets with high velocity vary directly as the viscosity of the body.

Commenting editorially upon the value of the small-bore rifle in warfare with savage tribes, the *Journal* pertinently brings forward the question whether the shock caused by even an ultimately fatal wound is sufficient to stop a charge, before the attack has been partially or wholly successful. From the experience thus far, and especially from the results of Surgeon-Lieutenant Gould's observations, it would seem that this was not the case. Every one of his (Gould's) cases recovered quickly, whereas with other projectiles there would doubtless have been a considerable mortality.

The editor concludes that "The facts at present collected are insufficient to justify any want of confidence in this weapon for fighting at close quarters against fanatics, but, at the same time, they clearly indicate a possible disadvantage in its use, and further emphasize the need of close observation of all wounded, and the casualties caused by these small-bore rifles at all ranges by medical officers. Their interpretation cannot fail to be of value to those whose duty it is to advise the War Department upon ordnance questions."

MEDICAL NOTES.

Prostatic Hypertrophy.— The interesting discussion of the two papers on Prostatic Hypertrophy read before the Massachusetts Medical Society, which appear this week, is necessarily deferred to next week's issue.

Bequest to a Hospital.— By the will of the late Henry D. Polhemus, of Brooklyn, N. Y., the Long Island College Hospital will receive a dispensary building at a cost of $250,000.

Deaths under Chloroform.— Two deaths from chloroform anesthesia have recently occurred in Berlin, in both of which there were heart lesions which might have been recognized during life.

Award of the William F. Jenks Memorial Prize. — This prize of $500 has been awarded to A. Brothers, M.D., of New York, for the best essay on "Infant Mortality during Labor, and its Prevention."

The French Academy of Surgery.— Professor Guyon has been elected president of this society in place of the late Professor Verneuil, and Professor Lannelongue as vice-president in place of Professor Guyon, named as president.

A Woman for Health Commissioner. — Dr. Emma Johnston Lucas has been appointed health commissioner of Peoria, Ill. She is the first woman in the city to hold any public office. The medical men of Peoria, as well as the women's club, strongly endorse her candidacy.

A Pathologist to the London Asylums.— Dr. F. W. Mott, assistant physician to Charing Cross Hospital has been appointed pathologist to the London County asylums. He is to study the pathology of insanity in all its bearings, and is expected to give up his entire time to the duties of his office.

Women at the University of Buda-Pesth.— The University of Buda-Pesth, in response to an inquiry addressed to it by the Minister of Instruction, has expressed the opinion that women should be admitted to the classes in the medical and pharmaceutical faculties, and should be eligible for degrees in those subjects.

Texas Fever in the Southern States.— A telegram from Louisville states that a proclamation has been issued by the Kentucky State Board of Health quarantining against cattle from Virginia, North and South Carolina, Mississippi, Indian Territory, Alabama, Texas, Louisiana, Arkansas, Georgia and Florida, giving as a reason for this action that Texas fever has been introduced into these States recently and a number of cattle have died of it. The quarantine is to be maintained during all the year except December, January and February.

The Society of Medical Phonographers.— The first general meeting of the Society of Medical Phonographers will be held on Tuesday, July 30th, at 4 p. m., at the house of the Royal Medical and Chirurgical Society. Dr. Gowers, the President of the Society, will deliver an inaugural address. The meeting will be open to all members of the medical profession. The Secretary of the Society is Dr. James Neil, Warneford Asylum, Oxford.

Small-Pox among the Refugees from Mexico. — It is stated that there are 125 cases of small-pox among the negro refugee colonists who are held in strict quarantine at Eagle Pass, Texas. There are from five to ten deaths a day. The health officers are using every precaution to prevent the disease from spreading. The negroes are quarantined, and all fresh arrivals from Mexico are vaccinated. Not one case has appeared in Eagle Pass.

The School of Medicine for Women in St. Petersburg is now (says the *Medical Record*), thanks to private liberality, on a firm foundation financially and will soon be ready for work. The curriculum, which is to extend over five years, will be the same as that of the medical faculty in the university, and will be open to single women over twenty-one years of age. Single women of younger age and married women must be supplied with a written permission from their parents and husbands respectively. All students must know a certain amount of Greek and Latin. A clause provides that a woman holding the school's diploma will not be eligible as director of a general hospital.

Annual Meeting of the British Medical Association. — The British Medical Association has recently (July 30th and following days) held its sixty-third annual meeting at London. Sir J. Russell Reynolds, the newly elected President, delivered the opening address on the evening of July 30th. The evening was further enlivened by orchestral music from the band of the West London Rifles and the Strauss orchestra. The Association was divided into a large number of Sections for convenience of discussion. The section in Pharmacology and Therapeutics was from the first extremely well attended, due to a discussion on Sero-Therapeutics. Prof. H. P. Bowditch was present at the meeting of the Physiological Section, and took part in a discussion concerning the yellow spot of the retina. Addresses in Medicine and Surgery were delivered by Sir William Broadbent and Mr. Jonathan Hutchinson respectively. The last London meeting of the Association was in 1873, in that year presided over by Sir William Fergusson.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, August 14, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 54, scarlet fever 13, measles 10, typhoid fever 42.

Hospital Bequests.— The will of the late Aaron W. Spencer, of the Boston Stock Exchange, among many other charitable donations, leaves to the Boston Children's Hospital, $2,000; to the New England Hospital for Women and Children, $2,000; to the Carney Hospital, $5,000; to the Massachusetts Eye and Ear Infirmary, $2,000, and to the Boston Dispensary, $1,000.

A Change in the Boston Institutions Department.— Dr. Heath has recently made an important change in our public institutions, whereby Austin and Pierce Farms will no longer be under one head. Dr. Fisher will retain charge of Pierce Farm and Dr. Lane will manage Austin Farm. The plan is to effect a better classification of the insane than has heretofore been possible. It is extremely desirable that this should be done, so that the acute and chronic insane may be treated in separate institutions. The acute cases will be at Pierce Farm, the chronic at Austin Farm.

NEW YORK.

Scarlet Fever and Diphtheria in Hoboken, N. J. — In consequence of the prevalence of late of scarlet fever and diphtheria (about 150 cases having been reported during the past few weeks), the Board of Health of Hoboken, N. J., held a special meeting on August 5th, for the purpose of adopting more efficient measures for the checking of these disorders. There is a large tenement-house population in Hoboken, who live to a great extent in old buildings which are quite inadequately furnished with sanitary appliances. The sewerage system, particularly in the tenement sections, it is stated, is bad, and the Board of Health is handicapped by a lack of funds and the absence of a hospital for contagious diseases.

Death of Dr. E. J. Whitney. — Dr. Edward J. Whitney, a well-known Brooklyn physician, died at his residence in that city, of gastritis, on August 7th. Dr. Whitney was born in New York in 1839, and was graduated from the Medical Department of the New York University. He entered the United States service as a surgeon in 1861 and served with distinction throughout the war. After its conclusion he remained in the army for some time. For a considerable period he was stationed on the frontier in Arizona, and he was medical director of the expedition which escorted the first Governor of Arizona to his duty during the troubles in that territory.

Death of Dr. W. A. Betts. — Dr. William A. Betts, a highly esteemed practitioner at Red Bank, New Jersey, died at his residence in that place, of cardiac disease, on August 5th, at the age of sixty-two.

Dr. Betts was a graduate of the College of Physicians and Surgeons, New York, and had practised in Red Bank for thirty-four years.

An Infant Colossus. — A male child, fifteen months old, which is said to have weighed 92 pounds, died at Coney Island on August 10th. It had been of phenomenal size from early infancy, and was exhibited at several museums during the past year.

Miscellany.

NEEDS OF THE BOSTON FLOATING HOSPITAL.

The work of the Floating Hospital has thus far been entirely satisfactory.

A much larger number of sick babies has been cared for than last summer, and the rules governing admissions have been carefully enforced. Besides additional physicians and nurses, two trained nurses visit the children between the trips, which entails an additional expense.

In view of these facts, $500 more is needed to complete successfully the work of the season, which it is hoped will be forthcoming.

Contributions should be sent to Rufus B. Tobey, Berkeley Temple, South End, "A," or to Dr. Francis H. Brown, 4 Exchange Place.

HEMORRHAGE AFTER TOOTH EXTRACTION.

Dr. James McNaught reports, in the *British Medical Journal*, the following simple method of checking hemorrhage after the extraction of teeth:

"It consists in passing a double silk thread through both sides of the torn gum, either with an ordinary curved needle or a handled needle, and then tying firmly over the alveolar border. In none of the cases in which this method has been employed has it failed to stop the bleeding immediately and permanently. The stitch may be removed at the end of forty-eight hours."

The temporary success or complete failure of the usual methods in this stubborn form of hemorrhage, make one of such apparent certainty exceedingly welcome.

SULPHONAL POISONING.

An interesting case is reported in the *Lancet*, in which a dipsomaniac, after taking a large amount of alcohol in various forms, swallowed 265 grains of sulphonal.

The first symptoms were stupor, flexion of the knees, contracted pupils and absence of light reflex. The following day the legs were extended, and the soles of the feet arched in extreme flexion.

She slept from 5 p. m. on June 1st till 5 a. m. on the 4th — sixty hours — and did not regain speech till the 7th and the power of locomotion till the 9th.

This case is interesting as showing the irritation produced to the plantar branches of the post-tibial nerve — presumably by the sulphonal — and the long period that elapsed before the toxic flexion of the soles made itself manifest, thus showing the slowness of the action of the drug.

LENGTHENING OF THE MEDICAL COURSE.

The constantly growing tendency of the last few years to increase the requirements for the degree in medicine is apparently reaching every section of the country. The two-years' course, so long a disgrace to American medical education, will no doubt soon be a thing of the past. Such limited instruction as a two-years' course implies must be ultimately self-destructive, even without legal enactment requiring a more prolonged period of study. The *Cincinnati Lancet-Clinic* speaks of the advantage which Cincinnati will derive from the lengthened curriculum adopted by the American Medical College Association, in the fact, everywhere true, that better prepared students will more than make up for any lessening in the number of new matriculants. Were medical schools more adequately endowed, the good work would doubtless proceed much more rapidly than it has in the past.

COMPARATIVE STANDING OF THE AMERICAN MEDICAL PROFESSION.

The *Philadelphia Medical News* of July 27th comments at considerable length, editorially, on the relative standing of physicians in different countries, with conclusions by no means derogatory to America. The writer speaks of the shortness of our medical courses, the lowness of our examination requirements, the number of our charlatans and the popularity of the patent medicine. But in all this he finds America not essentially worse than the European countries, the apparent difference being due to our peculiar surroundings and conditions of life.

The fact that America has a physician to every 500 inhabitants, when England has a quarter, France a sixth, and Germany an eighth as many, finds its explanation in the character of our population, thinly scattered, especially in the West, over large areas of country, and therefore requiring a physician for a much smaller number of people, than would be the case in populous towns and cities.

The "rapid process" doctor, it is maintained, fills a much-needed want in those scattered communities where a well-trained physician would not be content to stay, hence a justification for our two-year courses. Considerable stress is laid upon the value of our post-graduate courses, as a means of supplying early deficiencies in education, a system of instruction scarcely known in England.

The ethical tone of the American physician the writer does not hesitate to put above that of our foreign neighbors, as exemplified, for example, by the court-physician's treatment of Morell Mackenzie in case of the Emperor Frederick. Quackery, also, is by no means limited to America, as the popular idea maintains, nor do patent medicines find here their securest home, in spite of the greater publicity of their advertisement.

In conclusion, the writer aptly sums up the state of affairs in the following paragraph:

"In short, all professions, as all nations, have their shortcomings, and while we have many things to be heartily ashamed of, both as individuals and as a class, and should slacken our struggle for self-improvement not a whit, yet we think it only fair at times to take stock of our virtues as well as our vices, and to cheer ourselves with the thought that with all our shortcomings our intentions are good, our hearts in the right place, and our rate of progress distinctly appreciable."

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Correspondence.

MODERN FEMALE INVALIDISM.

In the course of the preparation of the Shattuck Lecture for 1895, on "The New England Invalid," recently published in the Journal, its author, Dr. R. T. Edes, obtained a letter from Dr. Mary Putnam Jacobi, which by his and her permission we print. The letter was not originally prepared for publication. Criticisms might perhaps be made upon it as to its details, but as a whole it is very interesting and suggestive, and we commend it to our readers.

Hotel San Marko, St. Augustine, Fla.

Dr. Robert T. Edes. *Dear Sir:* — Dr. Morton handed me your letter to her some two or three weeks ago, asking me to comment on it. I do not know that my comments will be of any use; still, as Dr. Morton asked me to do so, I will offer a few suggestions.

In the first place, it seems to me that this entire question needs to be dealt with on a much larger scale, and from a more anthropologic standpoint than is usually the case. Impairment of reproductive function through disease, or imperfect development of the reproductive organs, is a race fact of the greatest importance; and much evidently depends on quite a combination of conditions. To assume, as good old Miss Beecher did, that all the troubles connected with reproductive organs can be explained by the habit of wearing many petticoats, is to rely upon a most superficial and inadequate explanation. Miss Beecher suggested, as a remedy for the evil, a hoop skirt, which actually and by independent agency came into fashion a few years later; but I doubt if it greatly changed the conditions Miss Beecher was considering.

In the most general sense, and apart from specific infections and mechanical injury, utero-ovarian disease is evidently traceable to imperfect development; and it cannot be denied that this is alarmingly prevalent among American, and especially among New England girls. But I think it is putting the cart before the horse to assert that this imperfect development of the reproductive organs and corresponding nerve centres, is due to over-stimulus, over-education of the intellectual centres.

The first question to ask is, Why are the latter centres in such a state of activity, that they spontaneously demand opportunities for greater exercise, or eagerly respond to the systematic education, which for the first time in the history of the world, is offered to masses of girls?

My own answer would be complex. In the first place, it seems to me that reproductive failure, or rather the relative degree of it which is observed, and which is shown in amenorrhea, dysmenorrhea, the ovaro-metritis of menstrual subinvolution, in sterility after the birth of one child, that these phenomena are fundamentally phenomena of acclimation. On that very account they should be more conspicuous in New England, whose rigorous climate differs more from that of Old England than does the climate of the Middle States. In the South and West the influence of malaria replaces the influence of a colder climate.

I am immediately reminded that the climate of Canada is more rigorous than that of New England; yet both French and English Canadians are remarkable for fertility, and I think are much less subject to uterine disease.

It is evident, therefore, that other elements come in to complicate one that always exists to some extent unless counteracted, when a race is transplanted to a foreign climate, as the English in India. The second condition I would refer to the special circumstances of the settlement of New England. For a hundred years there were conditions of peculiar hardships; and the present inhabitants are in many cases the descendants of those who during that first century struggled at once with cold, poor food, confinement to mean houses for two-thirds of the year, epidemic disease (small-pox) the morally depressive influence of constant apprehension from the Indians, and constant gloom from a religion as ferocious as the character of the Indian enemy.

In Canada during this same century, there was relatively little settlement by families who left descendants; it was colonization by monks and nuns and soldiers; and the half-breed illicit progeny of the latter had one ancestral foot well planted in the soil. The real colonization of Canada began in the next century, when conditions of life were beginning to be easier. On the other hand — and here is a curiously cross influence, which I think we must take into account — increasing care of life means diminished infant mortality and a consequent survival of individuals with a debility which, though sheltered during childhood, manifests itself irresistibly during adolescence. The powers of life, sustained for the more or less adequate fulfilment of individual functions, flag in reproductive nutrition; the wave ebbs from its outermost expansion. Another cross influence comes in here, which is almost paradoxical: namely, that people of exceptional longevity are now known not to transmit as much vigor to offspring as do those of only average strength. Hence, only those who survived exceptionally severe conditions, such as surrounded the early New England colonists, may be presumed, like the people who to-day live to eighty and over, to have absorbed or consumed the nutritive forces of the organism in the interest of individual functions; leaving less for the "supplementary waves" of reproductive nutrition, and less for the offspring developed in these.

How often does every physician receive in his consulting office frail girls brought by robust mothers, who cannot understand this fragility when they themselves have never been ill in their lives? This is the converse of what is also seen in the robust sons of sick mothers who seem to have absorbed all the strength of the parent stem. The influence of tubercular inheritance is especially important both in the development of uterine disease, of the anemia which often precedes this, and of the neuroses which may either precede, originate or replace this. I think cervical catarrh in young girls, with passive pelvic congestions and uterine displacements from relaxation of ligaments and of the pelvic floor, may almost invariably be traced to a tubercular family diathesis, as it frequently precedes tubercular disease in the individual.

Tubercular disease makes a *premier étape* of degeneration, that which gives a susceptibility to an external agent; hence is less profound than the spontaneous degenerations of the grave neuroses. Yet how many of the latter also, at their inception, merely imply a susceptibility to physiological or other irritants and would be averted were the nature of these better understood!

I believe that ovarian disease, on the other hand, though always originating in some degree of fundal endometritis, whenever it assumes marked prominence or independence, is always rooted in a neurotic diathesis rather than in a tubercular. Many of the nervous or even mental disorders often assigned to "reflex ovarian irritation" are the direct expression of cerebral disease or cerebral malnutrition, which also causes the vaso-motor paresis in the vascular territory of the ovaries; at least, this is my explanation.

Here, again, the individuals who would in former generations have died of tubercular disease in infancy or early adolescence are preserved by a better hygiene, therapeutics or climatic adjustment, to mature life, but on penalty of suffering from uterine disease excited either by celibacy or childbirth.

And, again, it was not necessary to wait for Grasset to show (as in his essay on "Tuberculosis and Hysteria"[1]) that the neuropathic constitution in itself is often a transformed tubercular diathesis.

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[1] Brain, 1880 (?)

The wide prevalence of consumption in New England, due to climate, to poor food, and to imperfect acclimation among ancestors, is certainly a very important source of uterine disease, and attendant or equivalent neuroses in the present generation.

I believe it is also true that the imperfect development of reproductive organs, nerve centres, and correlatively of sexual instincts, is one reason that the intellectual life of women, and the cerebral cortex, has in the present generation become more active. To suppose that cerebral activity could dwarf sexual activity (which is often alleged) is absurd, or rather, though theoretically conceivable, is in contradiction with known facts. The one fact, now noted by ethnologists, that sexual passion is far more highly developed among highly civilized peoples than among savages, shows that normally the two poles of existence develop *pari passu* and not in antagonism to each other. Detailed proof could easily be furnished were it necessary.

But until now, women have not held a normal position as complete human beings; their mental activity, though often considerable, has been spontaneous, untrained, unsubjected to systematic educational drill. I think the flagging of reproductive activities, due to temporary impairment of race vitality, has facilitated this extraordinary new departure in the *régime* of the race, whereby the sex whose brain has been hitherto neglected, is to-day educated, stimulated, often unfortunately forced.

But because this new departure is a race innovation, it undoubtedly involves difficulties and dangers, risks a certain dislocation of organic adjustment, which can only be gradually triumphed over. It requires the most careful study of individual cases, and recollection of three facts. First, that the girls already in possession of the most active, responsive and readily educatable brains, may be especially deficient in general organic force, and especially as manifested in the reproductive organs, hence unprovided with the undercurrent of sexual strength which is needed to healthfully support cerebral activities. Second, that the other girls — and there are to-day not a few of this class — who are not only mentally active but seem physically sound and strong, may not have the final reproductive strength; their menstrual life is healthy, but they may either break down in child-bearing or have delicate children. Third, that the reproductive imperfection in question may show itself at first by no more tangible symptoms than moral incapacity for love or marriage, or fantastic perversity of sentiment in regard to these fundamental interests, this incapacity frequently involving or determining social situations that react most disastrously upon the health of the "highly strung" individual.

With all these race and constitutional complications, when educational systems are adopted which not only ignore such general considerations but violate the most elementary principles of ordinary hygiene; when brains which are not only immature but female, and whose stock of inherited capacity for trained work has all been derived from the parent of the opposite sex; when such brains are submitted to an often illogical cramming; when food is inadequate and exercise absolutely neglected; when hours of work are imposed which no adult woman would bear, and few men; when all this work is carried on under the stimulus of high-pressure competition, emulation, vanity, sometimes fear; when hundreds of girls are shut up together in the exciting atmosphere of a college life, so that their nerves are mutually reacting on each other,— under all these circumstances it is not at all wonderful that towards the close of adolescence so many girls exhibit constitutional debility and uterine disease.

It must, however, be noted, and contrary to what might theoretically be expected, that the influence of superior education, although occasionally seeming to be detrimental, is far less so than any other observed agency. Where there is to be trouble, this is always distinctly foreshadowed at or before the ages of sixteen, seventeen, eighteen, when the college education begins. My own statistics, as collected in the essay on "Rest in Menstruation," and also those which have since been collected by college alumnæ, all show that the least ill-health is found among the women who have been most highly educated. Of course, the fact partly shows that only healthy girls complete their course and graduate; others fall away earlier. At all events, the college-bred women are still so much in the minority that the general statistics are hardly affected by them; yet physicians often write as if these constituted the mass of nervous invalids.

But the list of causes of the special invalidism of the century is not yet ended. Every city physician who has also seen country people must have noticed that while mechanical injuries from childbirth are rather more common among country people, their influence is apt to remain limited to mechanical discomfort. But a much less degree of injury in city women excites, or is liable to excite, a protean swarm of nervous disorders. The French comment emphatically on this contrast between the Parisian and peasant women. Evidently this implies more delicately strung nervous organization, in more unstable equilibrium, as more developed among the inhabitants of cities, or specifically among the women who have been freed from manual labor. I think Tolstoi is quite right in asserting that such freedom is a curse to the "upper classes."

If the excessive drudgery of New England ancestors under unfavorable conditions weakened the constitution of their descendants, the excessive luxury of these descendants is certainly a second cause of weakness. I am not speaking now of coarse and unreasonable luxury, but of the refined and delicate ease of life and sensibility in which so many thousands now contrive to live — up to a certain point an advantage and a grace, beyond this a dangerous effeminacy. In manual drudgery, or in Puritan asceticism, there are dangers from exhaustion, depression, or gloom; but there is at least a discipline, an enforced stoicism, which is of immense value in bearing toil, trouble or shock. To-day stoicism has vanished from education, as asceticism from creeds; it is considered natural and almost laudable to break down under all conceivable varieties of strain — a winter dissipation, a houseful of servants, a quarrel with a female friend, not to speak of more legitimate reasons.

Women who expect to go to bed at every menstrual period expect to collapse if by chance they find themselves on their feet for a few hours during such a crisis. Constantly considering their nerves, urged to consider them by well-intentioned but short-sighted advisers, they pretty soon become nothing but bundles of nerves. They suffer from lack of the wholesome neglect to which their grandmothers were habitually consigned; too much attention is paid to women as objects, while yet they remain in too many cases insufficiently prepared to act as independent subjects. A healthy objectivity is one of the greatest desiderata for modern women. To knock the nonsense out of them, to direct attention from self, to substitute a cosmic horizon for that of their own feelings, who does not know the importance of this for thousands of hysterical women? and equally the impossibility of attaining it?

I think, finally, it is in the increased attention paid to women, and especially in their new function as lucrative patients, scarcely imagined a hundred years ago, that we find explanation of much ill-health among women, freshly discovered to-day, but which always existed, and which is often due to conditions arising among men, and not therefore new. Shattered nervous systems are inherited by girls from the alcoholism of the fathers; gonorrhea contracted by wives from husbands; sterility due to licentiousness in which the innocent woman may have no share; enforced celibacy due to bad social arrangements; occasionally, though less and less frequently, childbirths too close together; certainly all these causes of ill-health to women have existed for centuries. I think the peculiarity of the present time is that now attention is being drawn to the special effects produced upon women by these general causes. All of which is respectfully submitted,

Very truly yours,
MARY PUTNAM JACOBI.

METEOROLOGICAL RECORD,

For the week ending August 3d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..28	29.83	72	77	66	70	53	62	N.	N.W.	15	5	F.	C.	.03
M..29	29.93	69	80	58	53	58	56	N.W.	S.W.	8	14	C.	C.	
T ..30	29.76	71	79	63	69	90	80	S.W.	W.	16	6	O.	C.	.46
W..31	29.83	63	72	54	56	60	58	W.	S.W.	9	9	C.	C.	
T .. 1	29.86	64	71	56	56	65	60	W.	S.W.	15	8	O.	F.	
F .. 2	29.94	66	72	59	71	71	71	W.	S.E.	9	5	O.	F.	
S... 3	30.01	68	79	58	53	60	56	W.	S.W.	6	10	F.	F.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, August 3, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,956,000	893	492	26.20	9.60	18.10	.80	3.80
Chicago . . .	1,600,000	—	—	—	—	—	—	—
Philadelphia .	1,139,457	—	—	—	—	—	—	—
Brooklyn . .	1,013,000	500	286	33.00	8.80	28.60	.80	1.60
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	244	137	31.98	6.56	27.47	1.64	2.87
Baltimore . .	500,000	—	—	—	—	—	—	—
Cincinnati . .	325,000	—	—	—	—	—	—	—
Cleveland . .	325,000	110	—	24	—	—	—	—
Washington .	285,000	103	58	27.16	7.76	21.34	2.91	.97
Pittsburg . .	272,000	86	48	24.36	8.12	18.56	3.48	2.32
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	35	10	28.60	2.86	17.16	11.44	—
Charleston . .	65,165	38	9	15.78	18.41	5.26	7.89	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	24	17	44.38	6.34	38.04	3.17	—
Fall River . .	92,233	57	38	50.75	5.25	49.00	—	—
Lowell . . .	90,613	36	24	50.00	5.56	47.26	—	2.78
Cambridge . .	79,607	31	21	51.68	—	38.76	3.23	6.46
Lynn	65,123	20	10	30.00	15.00	25.00	—	—
Springfield . .	50,284	14	8	50.00	—	50.00	—	—
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	31	20	45.22	—	45.22	—	—
Holyoke . . .	43,848	—	—	—	—	—	—	—
Brockton . .	33,939	5	3	—	—	—	—	—
Salem	33,155	26	15	42.35	3.85	34.65	3.85	—
Haverhill . .	32,925	9	6	—	11.11	—	—	—
Malden . . .	30,209	14	6	42.84	7.14	42.84	—	—
Chelsea . . .	29,806	11	5	18.18	—	—	—	9.09
Fitchburg . .	29,383	7	2	—	14.28	—	—	—
Newton . . .	28,837	12	6	—	6.25	—	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,954	10	4	20.00	10.00	—	10.00	—
Waltham . .	22,058	9	1	—	11.11	—	—	—
Quincy . . .	19,642	10	5	40.00	20.00	30.00	—	—
Pittsfield . .	18,802	3	1	33.33	—	33.33	—	—
Everett . . .	16,585	9	4	11.11	—	11.11	—	—
Northampton .	16,331	2	1	50.00	—	50.00	—	—
Newburyport .	14,073	5	3	40.00	—	40.00	—	—
Amesbury . .	10,920	4	2	25.00	—	—	—	—

Deaths reported 2,467; under five years of age 1,292; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 786, consumption 218, acute lung diseases 136, diarrheal diseases 622, diphtheria and croup 64, typhoid fever 37, measles 22, whooping-cough 22, cerebro-spinal meningitis 8, scarlet fever 5.

From measles New York 13, Brooklyn 9. From whooping-cough New York 14, Providence 3, Washington 2, Boston, Fall River and Cambridge 1 each. From cerebro-spinal meningitis New York 5, Worcester, Chelsea and Taunton 1 each. From scarlet fever New York, Providence, Lynn, Quincy and Amesbury 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending July 27th, the death-rate was 22.5. Deaths reported 4,572; acute diseases of the respiratory organs (London) 185, diarrhea 903, measles 156, diphtheria 77, whooping-cough 55, scarlet fever 39, fever 22, small-pox (Oldham 2, London 1) 3.

The death-rates ranged from 11.8 in Brighton to 31.5 in Preston; Birmingham 20.3, Bradford 21.4, Cardiff 18.4, Hull 25.7, Leeds 24.0, Leicester 23.7, Liverpool 30.0, London 23.0, Manchester 25.0 Newcastle-on-Tyne 16.9, Nottingham 17.7, Portsmouth 17.0, Sheffield 21.1, Swansea 16.7, West Ham 30.1, Wolverhampton 27.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 2, 1895, TO AUGUST 9, 1895.

A board of officers to consist of **Major Philip F. Harvey**, surgeon; **Major George H. Torney**, surgeon, and **Captain Charles F. Mason**, assistant surgeon, is appointed to meet at West Point, N. Y., August 15, 1895, or as soon thereafter as practicable, for the physical examination of the cadets of the first and third classes; the cadets of the second class on their return from furlough and such other cadets of the U. S. Military Academy and candidates for admission thereto as may be ordered before it.

A board of officers is appointed to meet at Fort Robinson, Neb., on Friday, September 6, 1895, for the examination of **Captain Louis W. Crampton**, assistant surgeon, with a view to determining his physical fitness for promotion. Detail for the Board: **Colonel Dallas Bache**, assistant surgeon-general; **Major Henry McElderry**, surgeon; **Major Joseph K. Corson**, surgeon.

Leave of absence for two months is granted **First-Lieut. Charles F. Kieffer**, assistant surgeon, U. S. A.

Leave of absence for one month is granted **Major Ezra Woodruff**, surgeon, Fort Keogh, Montana.

Leave of absence for two months is granted **First-Lieut. Wm. F. Lippitt, Jr.**, assistant surgeon, Fort Leavenworth, Kansas.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 10, 1895.

C. G. **Herndon**, surgeon, detached from Bureau of Medicine and Surgery, to duty on the "Lancaster."

F. C. **Brathwaite**, passed assistant surgeon, detached from Naval Hospital, Norfolk, Va., to duty on the "Lancaster."

E. R. **Stitt**, passed assistant surgeon, detached from special duty and ordered to the "New York."

J. F. **Urie**, passed assistant surgeon, detached from the "New York," and granted two months' leave.

I. W. **Kite**, passed assistant surgeon, detached from the Monitors to duty on the "Franklin."

L. L. **Young**, passed assistant surgeon, detached from the "Franklin," to duty at Naval Hospital, Norfolk, Va.

SOCIETY NOTICES.

Tri-State Medical Society.—The seventh annual meeting of the Tri-State Medical Society of Alabama, Georgia and Tennessee will be held in Chattanooga, Tuesday, Wednesday and Thursday, October 8th, 9th and 10th. The programme will be announced later.

Frank Trester Smith, M.D., *Secretary.*

Medical Society of Virginia. - The twenty-sixth annual session of the Medical Society of Virginia is to be held in Wytheville, Va , beginning September 3, 1895.

Landon B. Edwards, M.D., *Recording Secretary.*

APPOINTMENT.

Dr. C. E. Edson has been appointed a physician to the medical out-patient department of the Boston City Hospital.

RECENT DEATH.

Dr. Benjamin S. Mackie, U. S. N., died at Philadelphia on July 25th, at the age of fifty years.

BOOKS AND PAMPHLETS RECEIVED.

Colorado School of Medicine, Annual Announcement, 1895-96.

Cystic Tumors of the Vaginal Vault, with Reports of Two Cases. By Frederick Holme Wiggin, M.D. Reprint. 1895.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum.............................. 2
Albany Medical College.............................. 18
Anheuser-Busch Brewing Association........ 28
Antikamnia Chemical Company...Antikamnia 30
Armour & Co............The Armour Laboratory 14
Assistant Wanted.............................. 2
Baker, L. W., M.D.... ....Riverview 19
Baker, Dr. W. H..............................Card 19
Bartlett, Dr. B. W..............................Card 19
Battle & Co..............................Bromidia 24
Bellevue Hosp. Med. Col..... Sessions of '94-95 16
B. H. R. Distilling Co.............................. 10
Bowdoin College...........Medical Department 16
Bowker, Dr. E. M........... ......Vaccine Virus 2
Boylston Medical Prize Questions............ 2
Breitenbach Co., M. J...........Pepto-Mangan 4
Channing, Dr. Walter.............................. 19
Chauncy Hall School.............................. 31
Cocke, Dr. James R.............................. 19
Codman & Shurtleff......Surgical Instruments 21
Coll. of Physicians and Surgeons, Boston... 16
Coll. Physicians and Surgeons, Baltimore, 16
Columbian University.............................. 16
Crittenton, C. N.................Vinolia Soap 5
Cutter, Dr. W. P.............................. 19
Dadirrian, Dr..............................Matzoon 25
Dartmouth College, N. H....Med. Department 16
Dow Portable Electric Assistant, The..... 26
Drevet Co..............................Glycozone 15
Evans & Sons............. ...Sandal Capsules 6
Fairchild Bros. & Foster...........Panopepton 7
Feeble-Minded Youth, Inst. for..Barre, Mass. 19
Fehr, Dr. J......................Baby Powder, etc. 12
Fellows, James I. ....Hypophos-phites 23
Fisk & Arnold....................Artificial Limbs 11
Flood, Dr. Everett.............................. 19
Fougera, E. & Co...........Imp'g Pharmacists 9, 27
Gear, J. Frank...........Surgical Instruments 6
Goldthwaite, Dr. S. V.............................. 19
Goode, T. F..............Buffalo Lithia Water 13
Gould's Medical Dictionary.......................... 29
Greene, Dr. E. M........Examinations of Sputa 19
Harvard University........Dental Department 16
Harvard University.......Medical Department 32
Improved Movement Cure Institute.......... 18
Jefferson Medical College.......................... 17
Kingsbury, Dr. A. D..............................Card 19
Leedom, Charles...............Nuclein Solution 5
Lehn & Fink....................Mfg. Chemists 20
Lloyd, Andrew J. & Co. .....Manufg. Opticians 2
Long Island College Hospital...................... 16
Mackie, Dr. L. V. G. .... Sanitarium 19
Maltine Mfg. Co............................ Maltine 4
Mariani & Co..............................Vin Mariani 11
Marks, A. A....................Artificial Limbs 25
Martin, Dr. F. C...................Vaccine Virus 11
McElroy, F. J....................Glass Syringes 11
Medico-Chirurgical College 16
Norton, Dr. Eben C........ ....Card 19
N. Y. Pharmaceutical Co.......................... 29
N. Y. Polyclinic and Hospital...................... 16
N. Y. Post-Graduate School and Hospital.. 17
Oakland Chemical Co.......Hydrogen Dioxide 21
Parke, Davis & Co....Pharmaceutical Chemists 1
Patch, E. L. Co...................Lithia Tablets 22
Peake & Buzzell.............Surgeons' Supplies 26
Pinaud, Ed.............................Sels Romains 3
Practice For Sale.............................. 2
Purdue Frederick Co., The.......................... 6
Reed & Carnrick..........................Pretonuclein 22
Ring, Dr. Allan Mott..........Nervous Diseases 19
Russell, Dr. F. W..............................Card 19
Schieffelin & Co..................Mfg. Chemists 14
Schulze-Berge & Koechl......Migranin, etc. 11, 31
Seeley, I. B. & Co.......... .Hard Rubber Trusses 22
Sharp & Dohme...................Mfg. Chemists 24
Stedman, Dr. Henry R..............................Card 19
Tanner, E. S..............................Publisher 31
Thayer, Henry & Co.............................. 8
Theodore Metcalf Co..............................Coca 8
Tufts College............... 17
Twitchell, Dr. George B.................... Card 19
Tyree, J. S. ....Antiseptic Powder 12
University of Maryland.............................. 16
University of the City of New York....... 18
Walnut Lodge Hospital.............................. 19
Waterman, Dr. Thomas..Animal Vaccine Virus 2
Weeks & Potter Co. ....Quinona 30
Wheeler Chem. Works.....Saw Palmetto Comp. 26
Wheeler, Dr. T. B.......................Phosphates 12
White, Dr. Walter H..............................Card 19
Willard, Dr. A. J..............................Card 19
Woman's Hospital, Lowell................... 19
Woman's Medical College, Baltimore....... 16
Woman's Med. Coll..of the New York Infirmary 16
Woodward, L. F. ....Stammering 2
Yale University...........Medical Department 16

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No.	Subject.	Instructor.	Place.	No. of Exercises	Begins.	Ends.	Days.	Hour.	Fee.
1	Anatomy of the Brain	Dr. Dexter	Medical School	12	July 1	July 26	Mo. We. Fr.	10	$20.00
2	Anatomy of the Ear[1]	Dr. Bryant	Medical School	13	Aug. 2	Aug. 30	Mo. We. Fr.	2	20.00
3	Histology and Microscopy[2]	Dr. Ames	Medical School	18	July 15	Aug. 16	Mo. We. Fr.	3	20.00
4	Clinical Microscopy[1]	Dr. Whitney	Mass. General Hospital	17	June 1	June 29	Tu. We. Fr. Sat.	11.30	15.00
5	Clinical Microscopy	Dr. Whitney	Mass. General Hospital	18	July 1	July 31	Tu. We. Fr. Sat.	11.30	15.00
6	Clinical Microscopy	Dr. Whitney	Mass. General Hospital	16	Sept. 3	Sept. 28	Tu We. Fr. Sat.	11.30	15.00
7	Chemistry[3 4]	Dr. Hills	Medical School	30	June 24	July 27	Daily	10	30.00
8	Medical Chemistry[4 5]	Dr. Ogden	Medical School	30	July 1	Aug. 3	Daily	1	30 00
9	Pathological Anatomy[6]	Dr. Taylor	Medical School	14	July 1	July 31	Mo. We. Fr.	3	20 00
10	Pathology of Infectious Diseases[1]	Dr. Wright	Medical School	27	June 20	July 20	Daily	2	25.00
11	Clinical Medicine	Dr. Gannett	Mass. General Hospital	21	July 1	Aug. 16	Mo. We. Fr.	9	20.00
12	Clinical Medicine	Dr. Gannett	Mass. General Hospital	19	Aug. 19	Sept. 30	Mo. We. Fr.	9	20.00
13	Clinical Medicine	Dr. Withington	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10.30	15.00
14	Clinical Medicine[1 7]	Dr. Vickery	Mass. General Hospital	12	June 3	June 28	Mo. We. Fr.	10	15.00
15	Clinical Medicine	Dr. Bowditch	City Hospital	16	June 4	July 26	Tu. Fr.	10	20 00
16	Orthopedic Surgery	Dr. Bradford	Children's Hospital	18	July 1	Aug. 28	Mo. We.	4	20.00
17	Clinical and Operative Surgery	Dr. Mixter	Mass. General Hospital	25	June 4	July 30	Tu. Th. Sat.	11	25.00
18	Clinical and Operative Surgery	Dr. Mixter	Mass. General Hospital	25	Aug. 1	Sept. 26	Tu. Th. Sat.	11	25.00
19	Clinical and Operative Surgery[1]	Dr. Monks	City Hospital	13	Aug. 2	Aug. 30	Mo. We. Fr.	10	20.00
20	Clinical and Operative Surgery[1]	Dr. Monks	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10	20.00
21	Genito-Urinary Surgery	Dr. Watson	City Hospital	13	June 1	June 29	Tu. Th Sat.	11	20.00
22	Clinical and Operative Surgery[1]	Dr. Conant	Carney Hospital	20	July 3	Aug. 16	Mo. We. Fr.	10	25.00
23	Clinical and Operative Surgery[1]	Dr. Conant	Carney Hospital	19	Aug. 19	Sept. 30	Mo. We. Fr.	10	25.00
24	Clinical and Abdominal Surgery[1]	Dr. Conant	Charity Hospital	13	June 6	July 30	Tu. Th.	10	25.00
25	Clinical and Abdominal Surgery[1]	Dr. Conant	Charity Hospital	17	Aug. 1	Sept. 26	Tu. Th.	10	25.00
26	Intubation of the Larynx[1 8 14]	Dr. Scudder	Medical School	3	July	Aug.			10.00
27	Surg. Apparatus and Bandaging[1 9 14]	Dr. Scudder	Medical School	10	July 8	July 18	Daily		15.00
28	Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	13	July 2	July 30	Tu. Th. Sat.	10	20.00
29	Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	13	Aug. 2	Aug. 30	Mo We. Fr.	10	20.00
30	Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	20.00
31	Minor Surgery	Dr. Brooks	Mass. General Hospital	14	July 1	July 31	Mo. We. Fr.	10	15.00
32	Minor Surgery	Dr. Brooks	Mass. General Hospital	14	Aug. 1	Aug. 31	Mo. Th. Sat.	10	15.00
33	Minor Surgery	Dr. Brooks	Mass. General Hospital	13	Sept. 2	Sept. 30	Mon. We. Fr.	10	15.00
34	Clinical Obstetrics	Dr. Green	Lying-in Hospital	45	June 1	July 31			30.00
35	Clinical Obstetrics	Dr. Green	Lying-in Hospital	45	Aug. 1	Sept. 30			30.00
36	Clinical Obstetrics[1]	Dr. Townsend	Lying-in Hospital	8	Sept. 2	Sept. 27	Mo. Fr.	12	15.0
37	Clinical Obstetrics[1]	Dr. Haven	Lying-in Hospital	9	July 1	July 29	Mo. Fr.	11	15.0
38	Operative Obstetrics	Dr. Haven	Medical School	11	July 8	July 19	Daily	4	20.
39	Diseases of Children[10]	Dr. Buckingham	Children's Hospital	18	June 1	July 30	Mo. Th. Sat.	10	20.
40	Diseases of Children[11]	Dr. Wentworth	Children's Hospital	18	Aug. 1	Sept. 28	Daily	10	20.
41	Diseases of the Ear	Dr. Blake	Eye and Ear Infirmary	12	Sept. 3	Sept. 28	Tu. Th. Sat.	9	12.
42	Diseases of the Eye[1]	Dr. Standish	Eye and Ear Infirmary	13	July 2	July 30	Tu. Th. Sat.	10	[illegible]
43	Diseases of the Eye	Dr. Cheney	Eye and Ear Infirmary	22	June 12	July 31	Mo. We. Fr.	9	[illegible]
44	Diseases of the Larynx	Dr. Farlow	City Hospital	13	June 3	July 12	Mo. We. Fr.	10	[illegible]
45	Diseases of the Nervous System	Dr. Walton	Mass. General Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	[illegible]
46	Diseases of the Skin	Dr. Bowen	Mass. General Hospital	20	July 2	Aug. 15	Tu. Th. Fr.	10	[illegible]
47	Diseases of the Skin	Dr. Bowen	Mass. General Hospital	20	Aug. 15	Sept. 27	Tu. Th. Fr.	10	[illegible]
48	Diseases of Women	Dr. Haven	City Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	[illegible]
49	Diseases of Women	Dr. Washburn	Women's Free Hospital	12	July 1	Aug. 8	Mo. Th.	3.30	[illegible]
50	Diseases of Women	Dr. Washburn	Women's Free Hospital	12	Aug. 12	Sept. 19	Mo. Th.	3.30	[illegible]
51	Diseases of Women[1 12]	Dr. Burrage	St. Elizabeth's Hospital	13	June 3	July 15	Mo. Th.	10	[illegible]
52	Diseases of Women[1 13]	Dr. Burrage	St. Elizabeth's Hospital	13	July 18	Aug. 29	Mo. Th.	10	[illegible]
53	Bacteriology[1]	Dr. Ernst	Medical School	36	July 1	Aug. 10	Daily	3	[illegible]
54	Hygiene	Dr. Harrington	Medical School	36	July 1	Aug. 10	Daily	3	[illegible]
55	Municipal Sanitation	Dr. Durgin	Medical School	14	July 1	July 31	Mo. We. Fr.	3	[illegible]
56	Practical Therapeutics[1]	Dr. Tenney	Boston Dispensary	20	July 8	Aug. 21	Mo. We. Fr.	10	[illegible]
57	Clinical Pathology	Dr. E. W. Dwight	City Hospital	14	Aug. 1	Aug. 31	Tu. Th. Sat.	10	[illegible]
58	Clinical Pathology	Dr. E. W. Dwight	City Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	[illegible]
59	Clinical and Abdominal Surgery	Dr. Elliot	Mass. General Hospital	21	June 3	July 19	Mo. We. Fr.	11	[illegible]
60	Clinical Surgery	Dr. F. B. Harrington	Mass. General Hospital	18	July 2	Aug. 30	Tu. Fr.	11	[illegible]
61	Surgery of Children[1]	Dr. Lovett	Children's Hospital	13	Aug. 17	Oct. 1	Tu. Sat.	4	[illegible]
62	Genito-Urinary Surgery[1]	Dr. Thorndike	City Hospital	13	Aug. 2	Aug. 30	Mo. We. Fr.	10	[illegible]
63	Genito-Urinary Surgery[1]	Dr. Thorndike	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10	[illegible]
64	Practical Pharmacy[5]	Dr. C. Harrington and Mr. Jordan	Medical School	12	July 1	July 26	Mo. We. Fr.	4	[illegible]
65	Practical Pharmacy[5]		Medical School	12	July 29	Aug. 23	Mo. We. Fr.	4	[illegible]
66	Pathological Histology[14]	Dr. Mallory	Medical School	25	July	Aug.			[illegible]
67	Pathological Anatomy[14]	Dr. Mallory	City Hospital	20	July 20	Aug. 20			[illegible]

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PAGE

ADDRESS.

THE PROFESSION AS VIEWED BY THE PUBLIC. *By C. Ellery Stedman, M.D.*, Dorchester....... 177

ORIGINAL ARTICLE.

CASTRATION FOR HYPERTROPHY OF THE PROSTATE. *By F. C. Thayer, M.D.*, Surgeon-General of the National Guard of the State of Maine....... 182

CLINICAL DEPARTMENT.

TWO CASES OF DIPHTHERIA SUCCESSFULLY TREATED BY ANTITOXIN FURNISHED BY THE MASSACHUSETTS STATE BOARD OF HEALTH. *By John S. Phelps, A.M., M.D.*, District Physician to the Boston Dispensary....... 184

DIFFUSE HYPERTROPHY OF THE BREASTS. *By Francis W. Anthony, M.D.*, Bradford, Mass., Surgeon to Haverhill City Hospital....... 185

REPORTS OF SOCIETIES.

MASSACHUSETTS MEDICAL SOCIETY. SURGICAL SECTION, JUNE 11, 1895....... 186

The Treatment of Prostatic Hypertrophy.

MAINE MEDICAL ASSOCIATION. FORTY-THIRD ANNUAL MEETING, PORTLAND, JUNE 5, 6 AND 7, 1895....... 193

A Unique Case of Apoplexy.— Cerebral Embolism.— Neurasthenia. — Castration for the Relief of Hypertrophied Prostate.— Vaginal Hysterectomy. — Pyosalpinx. — Thyroid Extract in Cases of Myxedema. — Hennequin's Method of Treating Fractures of the Thigh.— Tubercular Disease of the Knee-Joint.— Revision of the Code of Ethics. — Chips from Thirty Years' Experience.— The Radical Cure of Inguinal Hernia. — Displacement of the Gall-Bladder.— Case of Pulmonary Tuberculosis Cured by the Curasso Treatment.— The Sequelæ of Diphtheria.— Reciprocal Influence of the Masses and the Individual. — A Clinical Study of Typhoid Fever.

EDITORIALS.

THE PROXIMATE CAUSE OF SENESCENCE AND DEATH; WHY THESE ARE NECESSARY....... 195

OVER-OPERATING IN GYNECOLOGY....... 197

MEDICAL NOTES....... 198

The Memory of the Late Dr. Dujardin-Beaumetz. — Testimonial to Sir Joseph Lister.— Medal Awarded to Dr. Tryon. — Honors for Irish Medical Men.

New England.

Acute Infectious Diseases in Boston. — Prevention Cheaper than Cure.

New York.

Yellow Fever at the New York Quarantine Station.

CORRESPONDENCE.

THE RIGHTS OF MEMBERS OF THE MASSACHUSETTS MEDICAL SOCIETY. *F. W. Ellis, M.D.*, Monson, Mass....... 198

MISCELLANY.

NOURISHMENT BY SUBCUTANEOUS INJECTION.. 198

RECORD OF MORTALITY, AUGUST 10, 1895....... 199

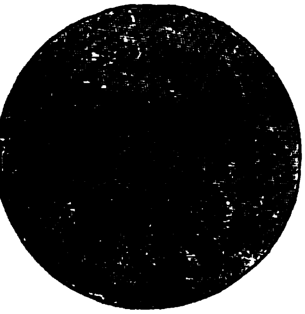
METEOROLOGICAL RECORD, AUGUST 10, 1895..... 200

ARMY, NAVY AND MARINE-HOSPITAL SERVICES. 200

AMERICAN DERMATOLOGICAL ASSOCIATION..... 200

SOCIETY NOTICES....... 200

BOOKS AND PAMPHLETS RECEIVED....... 200



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Address.

THE PROFESSION AS VIEWED BY THE PUBLIC.[1]

BY C. ELLERY STEDMAN, M.D., DORCHESTER.

"THE Breviary of Health," by Andrew Borde, published in 1547, has this prologue, which I adopt: "Egregious Doctors and Masters of the eximious and arcane Science of Physic — of your Urbanitie exasperate not yourselves against me for writing this Boke." I wish I could sustain such an exordium, and I feel that you will be disappointed that I am constrained to sink to a colloquial level. As you have appointed me to fill a half-hour of your hard-earned leisure, you must take the consequences while I talk to you in a familiar and rambling manner, with an unavoidable and cruel abuse of the first person singular about some views which the public holds of the profession.

In the set orations and addresses which the year brings round we are generally told of the progress which science has made; we are reminded of the blessings bestowed on mankind by vaccination, anesthetics, antiseptics, and bacteriological research, and we complacently dwell on the glory reflected on us, humble practitioners, by the great minds of the profession. All this is very right and very true. It is just and proper that we should feel that our vocation is a noble one, and has numbered in its ranks some of the great ones of the earth. But with this righteous pride it will do none of us harm and some of us good to recall now and then what people say of us, and consider if there are any grounds for aspersions on our manners and customs. By the people I do not allude to the anti-vaccinationists, or the anti-vivisectionists, or the anti-registrationists, or to the faith-curers in all their branches, including homeopathists, or to the noble army of cranks, or to those of the best educated among us, but to the People with a large P, who send for us when they are ill, and who pay, or do not pay, our bills. There is, we all know, a class, not small, who declaim loudly against doctors and their ignorance, and boast that they never need them. These are they who when taken ill want the doctor in the greatest hurry, demand the most attention, and whose recovery is signalized by a woful amnesia in regard to the physician's remuneration.

> "Tres medicus habet facies unam, quando rogatur,
> Angelicam: mox est, cura juvat, ipse Deus:
> Post ubi curato, poscit sua præmia, morbo,
> Horridus apparet, terribilisque Sathan.
> — *Enricus Cordus.*

> "Three faces wears the Doctor: when first sought
> An angel's, and a god's — the cure half wrought;
> But when, that cure complete, he seeks his fee,
> The Devil looks less terrible than he."

The testimony of such we can dispense with. To reach the other extreme we have only to remember that each one of us has two or three patients who would prefer to die under his hands, than get well at another's. The partiality of many of them is too apparent to be useful, and though they try to show themselves our best friends, their unreasoning and injudicious praise often does us harm; they tease patients of other doctors into changing their physicians, and beget the lively hatred of our dislocated brother. But the consideration of such items would lead us too far.

The gravest charge made against the profession and the most widely credited, is that of being abortionists. Let us consider the grounds of this imputation. One of our best men, whom all of us respect and many of us love, was called to a young woman in one of his families, and to his vast surprise found the maiden — whom he had known from her birth — in the throes of a miscarriage. After scolding briskly for some minutes, he proceeded to relieve her of her chorionic encumbrances. As he worked red-handed an aunt came in, and rising to the situation, exclaimed, "So you *are* in the business after all." The rage of the good-hearted and honorable man may be fancied. He now devotes himself to the infernal gods if he ever attends a woman in that trouble again; and if he finds himself caught at the bedside, he abandons the case.

Last winter I was called to assist in a tragic drama. A young wife who had a child a year old; a devoted and adoring husband; was pretty, lively and agreeable, but spoiled, having never had anything denied her; who had everything to live for — in the absence of her doctor sought my advice, in dreadful distress because she was pregnant. On his return she asked his counsel, but would not take it, nor listen to argument, preaching nor soothing, but said if we could not help her she would go to some one who had the knowledge and means to do it. She kept her word, alas, and in due time my friend was summoned. She had been, six days before, to an abortionist — a woman — who had inserted a bougie which remained *in situ* three days; a man came out two or three times to see her. She had not been changed nor washed: the chamber reeked with a fetid odor; pain and chills and fever, racked her body, while her mind was wrung with remorse and apprehension. Every resource known to modern science was applied, but in vain; and she died, after an illness of three weeks, in wild delirium. Although it is not required by law that we should report the occurrence of any case of criminal abortion, otherwise than by the death-certificate, the medical examiner was at once notified. He came, and tried to find out the names and address of the criminals; but the husband, to whom the wife had confided them, stoutly kept the secret. The examiner reported that the embalmer had already put in his destructive work, that it would be impossible to identify the malefactors, and that further investigation would only make a noisome and useless scandal. Nothing could be done. I was abused for calling in the medical examiner. The murderess, slapping her pocket, if she had one, with ghoulish glee, rejoiced and was exceeding glad that she had encompassed her reward, and made us her accomplices. Were we not her accomplices?

Most of you have read in the *New York Medical Record* of March 23, 1895, the affecting experience of two good doctors in that progressive town. For the benefit of those who have not I will reproduce a part of the report: A reputable physician was called to see a woman dying of septic peritonitis in the house of a midwife. The patient denied that any criminal operation had been performed, and positively stated, to the best of her knowledge, that the miscarriage of which the sepsis was the result was caused by a strain in lifting. The midwife said that she had only used tampons to control the flooding. The gravity of the case made a consultation necessary. The consultant, after hearing the same story, proceeded to afford such counsel and assistance as seemed necessary, after which the patient was sent to a neighboring hospital. The hospital authorities promptly notified the police, and the following morning the two physicians were taken into custody and escorted from their offices by two policemen to the station. The patient, however, was dead when the physicians and police arrived. Before she died the patient charged the midwife with the abortion, but emphatically exonerated the two gentlemen who had endeavored to minister to her in her extremity. In spite of this positive evidence, the physicians were taken to the Police Court and thence under the escort of two detectives, and in company of the midwife, were sent to the coroner's office. The coroner, taking an undue advantage of the situation, insisted on imprisonment or bail, but was eventually persuaded by parties who were better able to understand the real merits of the case to release the supposed culprits on their own cognizance. A coroner's jury of physicians subsequently entirely exonerated the attending physicians, but not until the suspicions of criminality against them were widely published by the daily press.

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[1] An address to the Norfolk District Medical Society, June, 1895. Published by request of the Society.

Dr. A. Y. Reid, of New York, had his experience of this kind in 1892. He was exonerated by a jury of eminent physicians, but a police captain said that Dr. Reid would thereafter have to swell the ranks of the abortionists, meaning that legitimate practice would leave him. Such was known to be the usual effect of having one's name enter the newspapers in connection with cases of abortion, however innocent he might be. Dr. Reid's patients did not leave him, fortunately; but his practice suffered, while legitimate expenses had been over seven hundred dollars. All this, by the way, is owing to the adherence of the people of New York to their antiquated coroner's system, and could not happen here. Such reports — served in the spicy, exaggerated, irresponsible style of modern journalism — help to form public opinion.

I do not suppose that I am alone in the experience of epidemics, the symptoms of which occur in matrons (sometimes spinsters) who come to one's office having reason to dread that they are pregnant. It is odd how such cases come in batches. Their fright in nine cases out of ten is groundless. Early in my career I used to prescribe for them small doses of aloes and myrrh. The recipe acted in some by their taking the whole prescription at once, or doubling it, or persisting in its use till their *primæ viæ* were raked as by a brush harrow — with the result in some cases of causing, or coinciding with, a return of the menses. Certain exaggerated expressions of gratitude led me to reflect. I next told such patients that what I gave them would not relieve the amenorrhea of pregnancy, and exhibited iron, or what was really a placebo. Fewer clients were grateful, but now and then one was too thankful by half. It is now many years since I have told women thus applying that I would not prescribe for them if there were any reason to suspect pregnancy. If you give medicine to a woman who thinks she is pregnant — and her period returns — nothing will convince her that she was not *enceinte*, that your recipe has not done the work and relieved her of her burden, and she will tell her friends how you have helped her. Who has not been told — when he declined to interfere — that other doctors do it; and the patient will give names of good repute to fortify her statement, which is born of some such practise as I have noticed. Nothing but a point-blank refusal to have anything to do with the case will produce the desired effect. And it is best to add when they threaten to go to an abortionist that they must not send for you to supplement his work. They seldom do go if probable consequences, physical, moral, and legal, are forcibly presented. But if you do so present them, you may consider your own hands aseptic, even if you have to eat your words and attend the patient after all you have said.

I know of a case, not in this neighborhood, where a physician was applied to by a young lady in one of his choice families who had the best of reasons for believing herself to be in the family way. After recovering from the shock, he deeply lamented the situation, and that professional reasons and legal requirements forbade him to help her out of her dilemma. She then declared that she knew where to go for help. Just how it was arranged I know not; but I do know that she went to the abortionist, that the family doctor engaged a nurse who received her on her return from town, and who, it was given out, was Cousin Minnie from Buffalo, on a visit. The doctor was sent for, assisted in the expulsion of the ovum, everything went off well, no one was the wiser, and miss soon recovered from the grip. I hold, and I hope all here hold, that the doctor, if the story be correctly told, was accessory and accomplice in the abortion. I say I hope; for I regret to add that some of his friends maintain that he did nothing professionally or morally questionable.

A friend of mine found himself wondering how it was that so many cases of miscarriage fell to his lot. He learned later that a well-known abortionist of the day had operated on a woman who had been obliged subsequently to send for my friend. He did his work so well, that the miscreant was pleased to approve, and recommended all his victims to send for him if they needed a doctor. Thus my friend — one of the straightest of our sect — found himself, to his dismay, in association with a man whose neck he would willingly have broken. The partnership was dissolved, I believe, by the death of the senior member.

By such methods are we made the accomplices of the abortionist; and it is not easy always to avoid the complication. As I have said, some physicians declare that if they find their patient to be the victim of a criminal abortion, they leave the house at once. That is virtuous and noble on their part, but what is to become of the patient? Is she to be left to hands that may be less deft and experienced? "Oh, well!" they say, "she has made her bed, and must lie in it; she shall take her chance." I argue this stand to be wrong. We find a woman suffering and in danger; our professional honor requires us to succor her or provide a trusty substitute. We are not the judges of her morals, nor are we to execute punishment of her sins. Such refusal only unloads the work, the anxiety, the responsibility, on shoulders which may be less broad, and quite as reluctant, if more sturdy than our own. Because the poor girl has got herself into a scrape, and in her bewilderment or her ignorance — for all such patients have not been warned of consequences — she is not to be left to die, as Dean Swift said he was, like a poisoned rat in a hole, because all skilled men and women will not go near her by reason of their superior virtue. This reasoning does not apply to our friend above mentioned who engaged the nurse, for he was not called in to confront a surprising and unwelcome condition, but had made the road smooth for the abortionist. Nor need it prevent our threatening the patient that we will not attend her, for menace is usually potent enough to prevent the crime. A few more leads in this direction would land us in the position of declining cases of specific disease because of their origin in lapses of virtue, which would be a regrettable loss to science and to our bloated bank accounts, besides delivering the victims into the hands of the advertising hobgoblins.

I do not blame some women for going wild when they find themselves pregnant. A large family, narrow means, a drunken or stingy or surly husband, ill health, may — all or some — make the burden too hard to bear. But though some seem to be almost irresponsible at the time, nearly all are amenable to reason. More than once have I asked a happy mother, who in the first months of her gestation, had begged and prayed to be rid of her load, what she would take for that baby now. The flash of gladness and the hug of maternal love were answer enough.

If there are any here who have not ignorantly procured an abortion, I congratulate him or her. Twenty-odd years ago I attended a young matron for amenorrhea. I was particularly careful about vaginal examinations, fearing to do harm if she were in the family way. As she did not gain fast, I sent her into the country. The change of air and scene, and the absence of household care and worry, did wonders. A monthly period returned, and she came home in renewed health and beauty. Soon afterwards she fell ill again; and in two or three months I was called once more, to find her again amenorrhic. I blamed myself for neglecting thorough examination, and instituted one that afforded me the information that the uterus was four inches long internally. The next morning I was joyfully told that she had miscarried in the night. The case was plain. The country air, and freedom from anxiety had cured the amenorrhea; nature responded by immediate conception; and I spoiled her work by my meddling. The lady was immensely grateful for my services; and to this day I have no more devoted friend, because she was convinced, in spite of all said to the contrary, that the result was owing to my sagacity and friendship — instead of gross ignorance.

The possibility of early and artificial termination of pregnancy seems to be known in other countries in no such degree as in this. This is partly owing to our prudery in regard to the marriage relation and the lack of proper teaching about it by our rulers and governors, doctors, spiritual pastors and masters. I have often wondered how much of the infrequency of criminal abortion in England was due to the comprehension of the nature of wedlock, as set forth in the marriage service of the Established Church, which gives no uncertain sound in its teachings about matrimony. Every woman who is wedded in that country from the queen to the poorest peasant is told (or was told till within a few years) before the altar what the object of marriage is, in language which admits of no mistake. Let me read you a few sentences. The opening address ends with duly considering the causes for which matrimony was ordained. First, it was ordained for the procreation of children to be brought up, etc. Second, it was ordained for a remedy against sin and to avoid fornication; that such persons as have not the gift of continency might marry, etc. Then they sing the psalm about thy wife shall be as the fruitful vine and thy children like the olive branches round about thy table. And next the parson prays that they may both be fruitful in the procreation of children, that they may see their children Christianly and virtuously brought up. Not much sickly sentimentality about that. Fancy the pastor of the First Church or of the Old South or the rector of Trinity lecturing a fashionable bride in that strain. How long would he hold his position? All these dreadful things are cut out of the American prayer-book. No Protestant clergyman in this country would refer to the indecent subject of children at a wedding. We all know how the Church of Rome enjoins on its laity to increase and multiply, and what safeguards she throws around the fetus; and to my untutored mind it seems as if the Roman and the Anglican teachings would not be wholly amiss in our own beloved land.

In "Outre Mer," Paul Bourget recalls the story of the fashionable lady in New York, who, when told that her friend, married last year, had presented her husband with twins, exclaimed "How vulgar!"

A parish priest, known to many of us by his piety, learning, and humor, was applied to by a man whom he had very often relieved, for further alms, and asked him, "How many children have you now, Dennis?" — "Elivin, father," he replied. "You'll always be poor at that rate; why do you have so large a family?" — "Sure," retorted the beggar, "your riverence isn't the man that 'ud interfere with the will o' God."

But to return to our facts. We have seen how the abortionists can make us their accomplices — that some of us give or have given to patients, tonics or placebos, after which some women, be they few or many, abort, and that through wrong treatment some may unintentionally induce miscarriage. We consider, too, that few people reflect or reason (only those naturally bright or those who have been trained to think, really reason); and we see how what is called the Public forms the opinion that not a few of us practice the Black Art.

Another thing people cannot understand is that we ban and deride and ill-treat the homeopaths. Now this is really unkind. We have done all we could to set them up. I may be wrong, but there is no law compelling any one to adopt my views. Though I have friends among them, no one can be less in sympathy with their tenets and with the practises of some of their fraternity than he who addresses you. Therefore, he could never see why we should do anything to help them. Now, in 1873, there were in the Massachusetts Medical Society a few men, mostly having the degree of M.D., Harvard, who had renounced the errors of the Old School to embrace those of homeopathy. They were quiet; sought no office; some of them had scholarly tastes; and their characters were, I presume, quite as good as the average. But their presence in the Society was regarded as a rodent ulcer gnawing its vitals. Accordingly, a by-law aimed at them was submitted to the Council. The only councillors voting against the by-law were Bowditch, Cushing and Faulkner. The reason one distinguished councillor gave for not voting against it was, in effect, this: — There are a certain number of men who will never be easy until they learn wisdom by experience. They have already cost the Society considerable money by similar follies, and it were better to give them rope enough to hang themselves.

At a meeting of the Norfolk District Medical Society held in Dedham shortly after this, a councillor was asked about the above vote. He answered the question, and added that the action reminded him of the Farmer who had a Dog addicted to the killing of Sheep. So he shut him up in the yard with a hitherto peaceable but healthy and vigorous old Ram. On the first overt offensive act of the Dog, the Ram went for the Dog and incontinently butted the life out of him. But the Ram was so elated with his new-found ability that he soon became a greater nuisance than the late Dog, attacking every one who ventured on his premises; and it was obviously necessary to teach him a lesson. So a Hat was provided for him to wreak his vengeance upon; but without the owner's knowledge, it was hung on the point of a new crowbar cunningly disposed in horizontal position, and the Ram having been patted and encouraged by his backer was let loose upon it. The Hat was not valuable and sustained little injury, but the energetic rush of the poor, dear, old Ram caused him to be spitted on the crowbar like a haunch of his kindred mutton.

Well, a trial was had, to the intense delight of the public, and the homeopaths were thrust out of the Society, for conduct unbecoming and unworthy of honorable physicians and of members of this Society, and for practising an exclusive theory or dogma. They lost no time in proclaiming how wofully they were persecuted. The newspapers took up their cause; subscriptions flowed in to the hospital fund; their college was built and endowed; and they were advertised in a fashion which no money they could have raised could possibly have effected. And in spite of all this, there are those who continue to uphold that we have evil-entreated the homeopaths.

One is often told by patients or others that medical etiquette is beyond comprehension of the vulgar, and that doctors are most touchy. If the voluminous rules of ethics submitted for our guidance — a sort of medical Bible — were referred to, the captious would have a basis of criticism. But what people cannot understand is the refusal or reluctance of physicians to supplant a good fellow, or to criticise his diagnosis or treatment, or to decline to continue attendance in a case where one has been called in an emergency; or why one should not make friendly visits when another doctor is in attendance. Nor can they see any reason why they should not send for any doctor they choose, or why he should hesitate to come because they had formerly employed some one else. They do not reflect that when we have served a family for some time, and seen its members over some rough places, we cherish a fancy that we are liked for ourselves as well as for our skill, and are led to believe that we have a sort of property in the family. The fact is that we cannot divest ourselves of the idea of the "family" physician. I can hardly do our youngsters better service than by pointing out that the family doctor is dead and buried. The specialists have squeezed him out as the vines do the big trees. Christian Science cannot resurrect him. A man told me at the club the other day, that when he quit his house that morning he left there three doctors; one was seeing his wife, one was dressing a sprained ankle, and the third was poking things into a boy's ear. It was all right — they were all three first-rate fellows, and he was glad to see them; but he sometimes wondered if the old institution of the family doctor — who did all those things well, if not elegantly — were not preferable, as it was certainly less expensive. On this, another gentleman, with grown children, said that he never meant to have a family doctor; he held himself free to call in any one he pleased. Some time since, on the occasion of illness at home, he sent for Dr. B, instead of Dr. A, the man whom he usually consulted — not for any particular reason, but because he wanted to. He was surprised to learn, later, that Dr. A had sent for Dr. B, and taken him soundly to task for answering the call. To the gentleman's question if he had done any wrong, I replied that he had a perfect right to send for any one he chose, that Dr. B was perfectly right in responding to the summons, and that Dr. A was not unreasonable in feeling hurt, that, after his services in the family, he had to realize that he was not indispensable, but he was wrong in scolding Dr. B. Moreover, he should have reflected that if Dr. B had not answered the message, the patient would have been vexed with both, and called in Dr. C, who would have been only too glad of the chance to oust either or both of them.

I make, no doubt, that as a race we are touchy. You are touchy; I am touchy. I know I am sad when I see another man's carriage at the door of an old patient whom I know I have served well. To be sure, it is a balm to my *amour propre* when I learn afterwards that the backslider is now attended for two dollars a visit, when he used, with cheerfulness (which was indeed perchance forced), to pay me three. It is also a source of melancholy when on account of illness you send or recommend a substitute, and the patient is so lacking in taste as to prefer and cling to the newcomer. It is trying to the unregenerate mind to recommend a certain course to a patient, which he dislikes, and have him send for another man and adopt, on the new doctor's advice, substantially the same regimen the old one advised. It is indispensable, however difficult, to cultivate a cheerful smile when one hears of these things; to be thankful if the sufferers have fallen into hands as clever as your own, if not superior. My young friends must begin by telling themselves that patients will change doctors from whim, from ignorance, from indifference, from neighborhood, from false report, for no reason. When one is young he is too boyish, too inexperienced, too hasty. When you grow old you are cross, forgetful, hardhearted, or what not. You are surprised to learn that you no longer go out o' nights, that you take no new patients, that you have turned all your old ones over to Dr. Tallboy, that you have retired from practice with an ample competence; and you are lucky if the local *Weekly Bug Light* does not print, as fashionable intelligence, the news that you are under restraint for softening of the brain. In this connection it is good to ask ourselves for just what reasons we change our dentist, our lawyer, our architect or our broker — the butcher, the grocer or the milkman. Some of them are as sensitive as we are, and it would require long and close argument to make them see the difference between the two cases.

We must also remember that in the face of medical etiquette most patients are cowards. I don't use the word in an invidious sense. They are not so bad as our public men, so-called statesmen, for when we find a politician possessing a vertebral column with well set up *erectores spinæ*, we are lost in wonder, love and praise. To illustrate by a familiar case: An old lady in a family which I counted most attached to me, fell and broke her radius. In the fright and hurry a neighboring surgeon was called in. He was — not of our kind. He did not gallantly suggest, as any of you would have done, that the usual attendant of the family be sent for, after the emergency was passed. The family wanted me, but feared to offend him. I pointed out that they had only to say that their family doctor would assume charge, and he could take no umbrage. But they were afraid. I thought it unkind to suggest that while they dreaded to hurt his feelings, they showed how strongly they relied on my friendship, in their confidence that *I* should take no offence. Again, when we mean to walk straightest we ourselves not seldom offend. I know that in the innocence of my heart, I have clumsily trampled on my friends' toes. Sometimes I have heard of it long afterwards. It is to be recollected, that, whenever another doctor is concerned, you will almost never get a proper account from the patient or his friends. I have had the best people tell me fibs calculated to make trouble between friendly physicians. The only way for us, when there is a difference, is to go directly to the doctor; never let a variance simmer; let it come to a boil and take it off; but ninety-nine times out of a hundred it will be found that it is a mere flash which never should have glowed into flame, a simple misunderstanding that three words clear up.

A fruitful topic for cheap orators is the ignorance of doctors. The most blatant talker cannot know how deeply we are sometimes made to feel our want of knowledge. Nor do they know that it is the most experienced man who feels it the most. If we assume that we know all that is or can be known, then we cannot blame those who take us at our word. And it is consoling to know, when we are abused for want of knowledge and success, that we receive much praise that is not deserved. Only the best informed of our patients are conversant with the facts of self-limited disease — and very much of the old *post hoc, propter hoc* argument remains in force. I rejoice in the possession of a family brought up by one of our most skilful men, who was able to impress his personality so strongly on all those whom he attended that they almost worshipped him. These people, though educated and highly intelligent, still believe that if the doctor is called in early enough, he will "break up" any "threatened" disease; that each symptom has its remedy; and that Nature left to her own devices would make but a poor showing of it. Such calamities as have happened to them have been sudden and unavoidable. Accordingly, one is highly prized for his attention and services, and any remarks about these newer views are not digested. There is no one of us who has not been happily surprised by the favorable turn of what looked like imminent disaster, and few who have wished it have been able to disown the praise and gratitude which followed.

The confident man, who is always sure of his diagnosis and certain that his treatment is going to succeed, is the man who oftenest comes to grief. It is greatly a matter of temperament, and temperament is a larger factor in character than is known or admitted. I have heard of a great surgeon, that he always promised his patients relief or cure when an operation was contemplated, but if it failed, he lost all interest in the case and could not be prevailed on to go near it again. Some are so timid that they let pass the most favorable moment for operation or other relief. Others do not recollect the best points in diagnosis or treatment till they have had hours to think it over. A few seem to blunder all their lives long. No man knows everything, and the law only requires ordinary skill in the recognition and treatment of injury or disease. There are many who know a great deal and can apply their knowledge at the right time.

It is the same in all occupations. Not all preachers, if I recollect rightly, can be listened to with edification and delight. I have heard of lawyers who could not agree about what the law was, and who failed to make the judge and jury see it in their light. I have known of engineers and architects who made mistakes, and of men of business whose speculations and operations failed. No one should be surer than doctors that most of horses' work is done by the slow and the unsound. Likewise most of the world's work is done by those who are far from being athletes or geniuses. From a long and pretty close observation of the manual and mental labor of those to whose livelihood I contribute, it seems to me that there are few workmen who do their tasks for anything else than the wage they bring — do it somehow and draw the pay. Seldom do we encounter one who works in the spirit of a legend I saw, twenty years ago, pinned above a marble-cutter's bench, "Study to show thyself a workman which needeth not to be ashamed."

I believe there are none whose work is of better quality or more conscientiously done than that of the general practitioner, who represents the body of the profession. It ill becomes those whom they serve, to doubt their capacity or to depreciate their work. The doctor may scold, he may even swear when he turns out of his warm bed of a cold night; but he turns out, he plods or drives through the snow and the mud and the cold — too often for no other remuneration than the glow of satisfaction if a knotty diagnosis be cleared up, or if remedies have steered Nature into a safe port. All over the world are men in laboratories, in the deadhouse, in the hospitals, in the hovel, striving to wrest her secrets from Nature, satisfied if after days and nights of toil they may elucidate one point — forge one link in the chain of evidence that shall establish a truth or expose an error. They live among the dead and dying, in an atmosphere charged with disease and death; and, as Dr. Holmes says, "They have tasks to perform which the chambermaid and the stable boy would shrink from undertaking."

Yes, we are ignorant; but it is not because the way to knowledge is closed or unfrequented. The old roads are thronged with travellers; and new ones are opened every day, in which one timidly steps at first, another enters and goes farther on the path, more join them and soon there is a crowd which thickens and presses on. Nature hides her jewels deep; and we must sweat and dig and bore and wash before she will yield her treasure. Much can be told of what has been done, but that is just the line of thought which we avoid to-day.

I had planned to speak of many other taunts that are shot in our faces; but I have already tried your patience.

To sum up — needless though it be to say it to this company — let us reflect that it is easy to give offence even when we least intend it; that even on the low ground of self-interest we prosper when we keep to the straight path; that in dealing with those not of our own communion, whatever they may do, no one of us can afford for one moment to forget that he is a gentleman. If we are told we do not know much, we confess it with shame and confusion of face; but we know as much, if not more, than those whom we pay for working for us; we do our best work when no one is watching us; and — thank God! — ours is the only profession that at any time does its work for nothing.

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Original Article.

CASTRATION FOR HYPERTROPHY OF THE PROSTATE.[1]

BY F. C. THAYER, M.D.,
Surgeon-General of the National Guard of the State of Maine.

THE prostate gland is generally described as resembling a large chestnut, being one and one-half inches in its vertical aspect, one and one-quarter inches in the direction of the urethra, and one-half of an inch in thickness. There are two lateral lobes and an isthmus, or the so-called middle lobe; this latter is said to correspond to the uvula in its position upon the vesical surface. It should be understood that in its normal condition, this so-called middle lobe is a connecting band between the lateral lobes, and can only be called such when hypertrophied or enlarged by disease. When thus enlarged, it may and often does obstruct the flow of urine through the vesical orifice of the urethra.

Not all hypertrophied prostates disturb their possessors, for I have frequently found patients with large rounded prostates who made no complaint of frequency or other disturbances of urination. But when the enlargement encroaches upon and occludes the urethra, the annoyance may be very great and oftentimes the suffering intense.

Any procedure which will bring relief to men suffering from the conditions consequent to and dependent upon hypertrophy of the prostate gland must be hailed with delight by the surgeon as well as by the sufferer, for such cases have long been a *bête noir* to the medical practitioner.

That these cases are of extreme frequency is shown by the statement of Sir Henry Thompson, who tells us that one man of every three, over fifty-five years of age, has some degree of prostatic enlargement; one of every seven some obstruction as a result, and one of every ten has enough hypertrophy of this gland to demand some sort of treatment. Thus it will be seen that a vast number of men in this country to-day are suffering from this senile change.

When the outflow of urine is interfered with, as a result of hypertrophy of this gland, its effects are very serious. Retention of urine, cystitis, ascending pyelitis, disease of the kidneys, sleepless nights, wretched days, dribbling urine,— all serve to make this condition one of the most distressing that we have to meet.

Upon theoretical grounds, Dr. J. William White, of Philadelphia, first suggested in a paper read before the American Surgical Association, at its meeting in Buffalo, May, 1893, the operation of double castration for the relief of the symptoms consequent upon hypertrophy of the prostate. This theory had its basis upon the believed analogy existing between uterine fibro-myomata and prostatic overgrowth, for histologically considered they are very similar; and that if removal of the ovaries in the female would reduce and dispel fibro-myomatous growths of the uterus, ablation of the testicles in the male might reduce and dispel hypertrophy of the prostate gland.

This was supplemented by the fact that in eunuchs and geldings the prostate becomes atrophied. By a series of carefully conducted experiments made upon dogs, Dr. White demonstrated that castration is surely and quickly followed by prostatic atrophy.

From the conclusions drawn from the analogy and the facts presented, Dr. White evolved the procedure which should rightfully bear his name. The operation itself is exceedingly simple, and in proper hands devoid of danger. Sentimental objections, to a man suffering from the results of prostatic hypertrophy, can have but little weight, particularly when he realizes that these glands are or soon will be functionless.

Since the publishment of this paper by Dr. White, many cases have been reported, with almost universally favorable results. And did time permit, it would be interesting and instructive to review the various phases of these cases. I shall content myself, however, by referring you to the various authors consulted in the preparation of this paper, and giving you a few conclusions drawn mainly from their experience.

I have but one case to report, and I regret that more time has not elapsed since the operation, so that its results might be more pronounced. But while I am not able in my case to report some of the almost miraculous results which have attended operations in other hands, yet sufficient cause is already evident to convince me of the good effects of the procedure in this particular instance.

Mr. R. C., age seventy-four, has always led rather an active life; not now engaged in business; always temperate in his habits; with the exception of chronic diarrhea — which lasted him several years — has enjoyed good health. In 1886, he developed, without apparent cause, an attack of acute cystitis, from which he entirely recovered. In 1887, he discovered that he was compelled to rise two or three times during the night to urinate. From that time until the winter of 1892, this symptom slightly increased. At this time he had complete retention of urine. It was then that I first saw him. The retention was relieved by the use of the catheter, a silver one with a large curve — it being impossible to use any other at that time. The use of the catheter was attended with a good deal of pain. There was a good deal of pus in the urine, and the bladder was washed daily with a half-saturated solution of boracic acid. Since then he has been drawing his urine with a No. 8, English scale, soft-rubber catheter. Rather more than thirty-six ounces are passed in the twenty-four hours, and all by the catheter — he not having passed a drop naturally for nearly three years. The catheter is used about every four hours, its introduction being attended with more or less pain, its withdrawal occasioning still more.

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[1] Read at the Annual Meeting of the Maine Medical Association in June, 1895.

At times he has suffered with lancinating pains in the perineum and glans penis. This last symptom has given him a great deal of distress, and he has contracted the habit of holding on to his penis a great part of the time. Pus has been pretty constantly present in the urine. He has used the boracic-acid solution when an increased presence of pus seemed to demand it, himself being the judge. He has strong erections and a decided sexual desire, which, however, he has not gratified.

During the past three months he has been in the habit of taking from a quarter to three-quarters of a grain of morphine daily. The urine is cloudy, strongly alkaline, and of a marked ammoniacal odor; specific gravity 1.018; some albumin; no other evidence of renal disease. By rectal touch, the prostate was found to be markedly hypertrophied and quite tender. The finger could barely reach its upper limit. It was not much rounded, but rather flattened, both lobes being quite dense and uneven.

I had no doubt of its being a typical case of senile hypertrophy. It appeared to me from rectal and urethral examinations, that the obstruction was due to enlargement of the median portion, rather than general hypertrophy. The catheter passes nine and one-half inches into the urethra before urine flows. Six ounces of urine can ordinarily be retained in the bladder without much trouble.

I suggested to him the possibility that removal of the testicles might afford him some relief, promising him nothing. He readily consented to have anything done which offered even the possibility of relief. Operation was made May 12, 1895, and the testicles were removed through a single median incision, as suggested by Dr. Francis S. Watson of Boston. As this can be done more readily and leaves but one wound, it commended itself to me as the best method. And I am very sure I shall in like cases make use of this plan in the future. The cord and vessels were tied *en masse* with a double ligature, the wound thoroughly dried, and closed with cat-gut sutures, without drainage; the septum being included in the grasp of the suture. The wound was dressed with a liberal supply of dry gauze, and the patient put to bed. He recovered promptly from the effects of the anesthetic, and four hours afterward expressed himself as feeling first-rate. Eight hours after the operation he passed a catheter and drew something more than eight ounces of urine.

The seventh day after the operation, pain has somewhat decreased, irritation of glans penis much reduced. He still uses a catheter and draws forty ounces (plus) of urine per day. Urine still contains some pus, and flows when the catheter is introduced nine inches into the urethra. The prostate is less tender and has become somewhat softer, otherwise remains the same. The wound dressed on eighth day and found completely healed.

Twelfth day. At the close of the first week the morphine was discontinued and the loss of the stimulant has had rather a depressing effect. An excessive and exhausting diarrhea followed the leaving off of the morphine, so that altogether he has presented for two or three days rather a dilapidated aspect. To-day, however, he expresses himself as feeling decidedly better. The attacks of pain are much less frequent, and the irritation of the penis is decidedly lessened, and he rarely touches it. The prostate has decreased in size, and there is hardly any tenderness. He still uses the catheter, and draws about forty-five ounces of urine in the twenty-four hours. There is still some pus and albumin. Specific gravity 1.018, reaction faintly acid.

Twenty-second day. The pain and distress is much lessened. He is gaining in strength and courage, and declares that he is decidedly better. He still uses the catheter and draws the same amount of urine as last reported. The prostate is softened and has markedly decreased in size.

I am aware that nothing is proven by a single case, especially one in which the positive improvement is so much delayed, as in the one just reported. But it adds one more to the rapidly increasing list, and is given for what it is worth. Personally, I am so well satisfied with it, that I shall surely recommend the operation in similar conditions.

Many interesting questions come up in connection with this subject, not the least of which is, Why should removal of the testicles result in atrophy of the prostate gland? Physiology is almost silent and gives but little information concerning the particular use of the secretion of the prostate. It not much more than intimates that it may play a very subordinate part, and possibly contribute something to the impregnating fluid.

Finger assigns to it the power of accomplishing the vivification of the previously motionless spermatozoa. It has been demonstrated that the prostate of animals enlarges and becomes more active coincidently with the other sexual apparatus at the time of breeding, thus implying that its secretion must contribute some principle to the seminal fluid.

If Finger's idea is correct, it is quite apparent that there may be a physiological as well as philosophical reason why atrophy of the gland should follow castration; for it is a well-known principle that nature thus disposes of tissues and organs for which she has no further use.

It would appear from the reports thus far made, that the experimental stage of this operation has long since passed, and that the increasing favorable evidence places it upon a legitimately established basis. And yet it must still be considered as *sub judice*, for it is not yet established that all cases of obstructive enlargement are thereby benefited. No operation or no procedure is a cure-all, and this will scarcely prove to be an exception. It is apparent that the cases must be carefully selected and must be those of true hypertrophy, not complicated with other forms of obstructive disease. Stone in the bladder, however, would not necessarily lessen the usefulness of the operation when accompanying true hypertrophy, for after the enlargement had subsided in consequence of the operation, the lithotrite could be more easily introduced into the bladder and lithotrity could be practised. This has been done in one case, at least, by White.

Too much should not be promised the patient in the line of insuring freedom from the catheter life, for emancipation from it depends largely upon the tonicity of the bladder, and voluntary micturition cannot be promised where pronounced atony exists.

The operation is of unquestioned value in diminishing the size of the prostate, whether of a soft adenomatous character or of a hard, tough, fibro-myomatous type. It relieves cystitis consequent upon microbic infection; it diminishes pain and relieves distress. It lessens the frequency and difficulty of catheterization. I confess I am at a loss and cannot understand why in many of the cases reported, the shrinkage of the prostate, normal micturition, and a subsidence of the active inflammatory symptoms should so quickly ensue, unless, indeed, in these particular instances, the enlargement is, in part, an inflammatory exudate, added to the already existing prostatic overgrowth.

It is said that glandular tissue predominates in the hypertrophied middle lobe, and that its enlargement is of an adenomatous rather than of a fibro-myomatous character; thus, perhaps, accounting for its rapid shrinking.

That the operation has a legitimate field there can be but little doubt, and in properly selected cases will prove a great boon to those suffering from conditions depending upon obstructive hypertrophy of this gland.

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Clinical Department.

TWO CASES OF DIPHTHERIA SUCCESSFULLY TREATED BY ANTITOXIN FURNISHED BY THE MASSACHUSETTS STATE BOARD OF HEALTH.[1]

BY JOHN S. PHELPS, A.M., M.D.,
District Physician to the Boston Dispensary.

These cases are interesting, in that they give an opportunity of observing the action of the antitoxin manufactured and dispensed by the Massachusetts State Board of Health, being the first cases of its use reported. In them its effect was most beneficial.

The patients resided in a most filthy tenement, with unhygienic surroundings, in South Boston. The father and mother with seven children, the youngest of whom, an infant at the breast, subsequently contracted diphtheria, lived in a suite of four rooms on the second floor with most wretched plumbing and sanitary arrangements above and below.

One room was given up to the sick ones and in this they were isolated as rigidly as could be done, for it was impossible to prevent the occasional mingling of the entire family. The sick were cared for by a devoted mother. The parents had free intercourse with the rest of the children and throughout the other rooms of the house. The father occupied the same bed at night with his diphtheritic child. Circumstances prevented their living otherwise, and how the whole family failed to contract the disease is not easily explained. A previous experience with diphtheria had rendered the mother posted in a crude sort of way as to its dangers. Her precautions against its spread by the free use of chloride of lime scattered about the house in filthy corners, the avoidance of contact with the discharges from the sick, and thorough washing of the hands with soap and water immediately after caring for her sick ones before attending to other duties, deserves due recognition. But these were more than counterbalanced by the conduct of the father, whose efforts in a similar direction were absolutely *nil*. In fact they tended to an opposite extreme, in consequence of his addiction to alcohol and frequently to its abuse.

Closer observations were impossible, owing to inability of more frequent visits and the absence of a district nurse, who could have seen that directions were carefully followed, and recorded the temperature, pulse, respiration, etc.

Case I. On March 30th, J. R., seven years old, was seen for the first time. He presented a suspicious-looking membrane on right tonsil, gray in color, and he had constitutional disturbances of not very severe type. Cultures were taken, a report from which the next day stated that Klebs-Löffler bacilli of diphtheria were present. The following treatment was instituted without awaiting the report, the membrane having extended to both tonsils. Peroxide of hydrogen (15 volumes), spray to the throat every three hours; tincture of chloride of iron, five minims, every four hours; whiskey, half a drachm, every four hours; and a cathartic. His case progressed slowly, with no serious symptoms. He had repeated epistaxis, but no nasal obstruction or discharge. Moderate fever and elevation of pulse. The membrane in the throat slowly disappeared, and by April 6th none could be seen, and the treatment was slowly cut down. Prostration seemed to be quite severe, and it was not until the 16th that he was up and dressed. On the 25th, cultures from the throat were taken, showing the Klebs-Löffler absent. Examination of the urine showed it to be normal. As his appetite and strength returned, an escape of food and liquids from his nostrils was noted on April 27th, and he had a distinct nasal twang to his voice, showing a paralysis of the soft palate. Tonic treatment with strychnia in minute doses has rendered some improvement in his condition, but the trouble has not yet entirely disappeared.

The house was fumigated, after the negative report from the throat culture, by the City Board of Health, and the sign removed.

Case. II. On May 1st I was again called, to find A. R., five years old, suffering with foul nasal discharge, following upon a cold in the head of one day's duration. Examination of the throat showed a swollen pharynx with an extensive grayish-white membrane on both tonsils, reaching to base of uvula on each side, and apparently continuing up into the naso-pharynx. There was marked prostration; eyes suffused; puffy, swollen cheeks and lips; and thick, pasty coat on tongue. Cervical glands slightly enlarged; respiration 36, labored pulse 135, temperature 100.6.° She presented the picture of a very sick child with diphtheria, with the chances of impending intubation or tracheotomy. Application for admission to the hospital was made, with reply of, "no beds." Antitoxin was strongly recommended, and at 5 P. M. 5.5 c. c. of Massachusetts State Board of Health diphtheria antitoxin (strength 1–50,000) was injected into the right thigh (three barrelfuls of an ordinary subcutaneous syringe, that being the only syringe available at the time). Cultures taken from the throat and nostrils showed Klebs-Löffler bacilli present. Examination of the urine before injection showed it to be normal.

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[1] Reported May 27, 1895.

The child was put upon brandy, two drachms every four hours, combined with three minims of tincture of chloride of iron. There was considerable shock after the injection.

The next morning respiration was 24, pulse 128, temperature 100.2°. The nostrils had a thick, white membrane extending away down to the alæ nasi, accompanied by a profuse foul-smelling discharge. The edges of the membrane in the throat seemed more clearly defined, the membrane swollen and the surrounding mucous membrane swollen and congested. She spent a restless night. That afternoon she had marked pallor and prostration, and 9 c. c. of the same antitoxin were injected into the same thigh, this time with a Koch syringe, with considerably less discomfort.

The next day, May 3d, snuffles increased, with epistaxis. Temperature dropped to 99°. Pulse and respiration remained the same. Urine showed slightest possible trace of albumin by heat test. The membrane in the throat seemed to be whiter, and actually melting away and very clearly defined. An urticaria-like eruption, the size of four fingers, gradually developed over the seat of injection, points of entrance of needle not involved.

May 4th. A small trace of membrane only remains in the throat as a slough. The snuffles have ceased, and the membrane has disappeared from the nostrils like a charm, and nasal breathing apparently perfectly clear. Patient sitting up in bed, and much interested in surroundings. Leg free from pain upon manipulation, and rash diminishing. Medication diminished.

May 5th. Throat absolutely free from membrane. Urticaria disappeared. Child apparently well. Temperature, pulse and respiration normal.

May 7th. Child up and dressed. Examination of urine shows it to be free from albumin.

No further symptoms or treatment. Cultures from the throat May 8th and 15th showed Klebs-Löffler bacilli present; May 23d, absent.

Case III. On May 6th, H. R., nine months old, showed signs of constitutional disturbance. Examination of the throat showed nothing but congestion. Cultures were taken showing Klebs-Löffler bacilli present; and on May 7th a small gray patch appeared on each tonsil, which developed into an extensive membrane on the 8th, covering both tonsils, uvula and pharynx, with a temperature of 101.5°. Nostrils apparently not involved. Slight enlargement of cervical glands. Respiration normal. On the morning of the 8th 9 c. c. of similar strength antitoxin were injected into his left thigh. Brandy and tincture of chloride of iron were given by the mouth, and he was transferred from the breast to the nursing-bottle.

On May 9th the temperature dropped to normal, the membrane assumed characteristics similar to those described in the previous case, namely, whiter, swollen and with outlines clearly defined, with a swollen, congested appearance of the mucous membrane of the pharynx. No extension of membrane apparent. There was marked prostation, with pallor, and difficulty in administering nourishment and treatment.

May 10th, two days after injection, the membrane very white and melting away. No nasal complications. General appearance much improved. Slight urticaria, size two cent stamp, over seat of injection; point of entrance of needle not involved.

May 11th. Temperature, pulse and respiration normal. In the throat there is a slight necrotic mass in place of the membrane. Mucous membrane congested and swollen. The child looks well, sits up in bed, and nurses the bottle with avidity. Urticaria disappeared.

May 12th. Throat absolutely clear, and the child appears absolutely well. Medication omitted. Specimens of urine unable to be obtained.

No further symptoms noted. Cultures from the throat May 15th showed Klebs-Löffler bacilli present; May 23d, gave negative result. No local treatment to the throat was used in either Case II or III.

Mrs. R. had nursed her child for forty-eight hours after the membrane had been present in its throat. She was given 5 c. c. antitoxin (1–50,000) in her left deltoid muscle on May 8th, as an immunizing dose. Cultures were taken from her throat at that time with negative results. Examination of her urine two days later showed it to be normal. She never showed any rash on her body, and stated that she felt just the same as if she had never taken it save for the prick of the needle.

The noteworthy point about these cases is the rapidity with which the membrane disappeared; in Case II in five (possibly six) days; in Case III in five days; and this without any local application. Inside of forty-eight hours the membrane showed itself vanquished. In Case I the membrane lasted eight days. The urticaria needs no comment.

A few itemized cases prove practically nothing; but when one sees an extensive membrane in a septic case of diphtheria melt away and disappear in about one-half the usual length of time, and that without any of the bother and exhaustion which accompanies the use of the local application, both to the physician and the patient, he cannot but entertain a hopeful outlook for the future use of antitoxin. I think the State Board of Health is to be congratulated on the production of such an efficient preparation.

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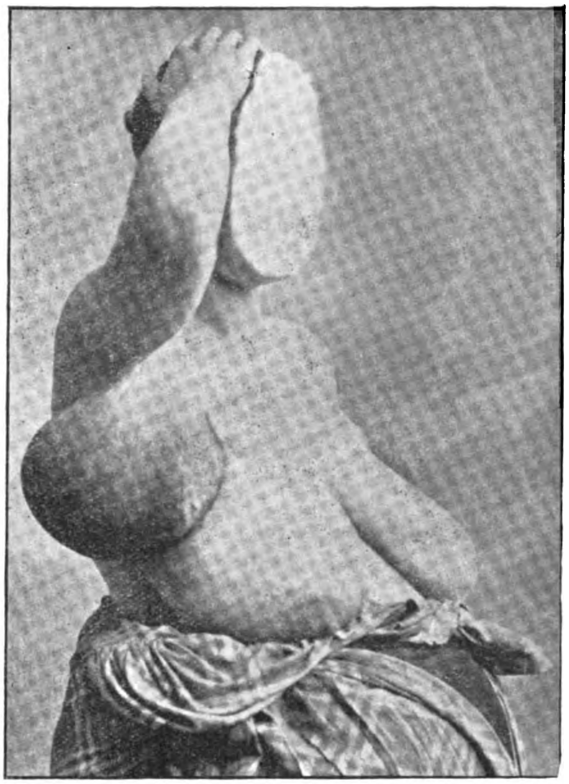
DIFFUSE HYPERTROPHY OF THE BREASTS.

BY FRANCIS W. ANTHONY, M.D., BRADFORD, MASS.,
Surgeon to Haverhill City Hospital.

The following notes are reported as continuing the history of a rare and interesting case.

The patient reported by Dr. J. C. Warren, in the Journal of August 3, 1893, as having diffuse hypertrophy of the breasts, became pregnant for the third time, and was under my observation during her pregnancy. The breasts, which had become smaller after her second delivery, again increased, until two weeks before the third labor they presented the appearance shown in the photograph. An apparent attempt at a nipple formed on the enlargement in the right axilla. An accessory nipple on the under surface of the left breast was surrounded by a dark areola. The enlargement in the left axilla was about one-fourth that on the right.

The labor, watched by Dr. G. M. Atwood, in my absence, was normal, as was the convalescence. Contrary to the method pursued at the time of the birth of the second child, nursing was allowed — in fact, it was insisted upon by the patient, who had lost her other two children — and was without unpleasant complications, the enlargement at the onset of the flow of milk being trifling and the supply about equal to the demand.



Two months after delivery the breasts had receded to a size about that before pregnancy.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

SURGICAL SECTION, JUNE 11, 1895.

THE TREATMENT OF PROSTATIC HYPERTROHPY.[1]

DR. L. BOLTON BANGS, of New York City: It is needless for me to say to you that the subject of prostatic enlargement and its treatment is, in my opinion, one of the most important surgical discussions of the day. When we consider the relation of enlargement of the prostate to human suffering, when we consider how many men of advancing years, who ought to go down to their graves in comfort, are the subjects of it, you will readily see, and I am sure you will agree with me in my opening remark, that it is one of the most important surgical questions of to-day to know how best to deal with it.

It has been stated by various teachers, by different surgeons, that prostatic enlargement makes its appearance in one man in three after the age of fifty, as some have it; and others state it after the age of sixty, and that one man in ten suffers from it. I once endeavored to make a record of all the men I examined to determine how many really had prostatic enlargement, and whether my statistics are in agreement with "one man in three" I am not sure at this moment, but I came to the conclusion after observing a great many cases of my own that we are wrong in stating that prostatic enlargement begins after the age of fifty. I believe that it begins — not that it always shows symptoms — at an earlier age than fifty or thereabouts. At any rate, there are enough men sufferers from this condition. I may have it; you may have it. It comes to be a grim thing when we contemplate it from the personal standpoint, therefore there is sufficient cause to warrant taking every step, to balance with care everything presented to our attention, and to consider how best we shall treat these sufferers.

In the main I agree with everything that has been said in the able presentation of this subject this afternoon, certainly with regard to the palliative treatment and for my comfort as well as for yours it should be borne in mind that the largest proportion of men with prostatic enlargement, even admitting the fact that it begins early in life, have no urinary symptoms — certainly not to a degree requiring the intervention of a surgeon.

Now then as to palliation. Bearing in mind that a large proportion of men with enlarged prostate have no symptoms, and that another proportion of them do have symptoms, it is also a satisfactory fact, perhaps to you, certainly to me, that these can go through life with only palliative treatment, and require no operation whatever. Of course that statement is to be modified by the condition of the individual who presents himself to you, and may be modified also by the stage of the disease at which he presents himself and by its progress. You all know men who seem so immune, whose tissues are so indifferent to the inroads of microbic bodies. I have in mind a man of eighty-two, strong, looking well, who never makes a drop of urine spontaneously, but carries his catheter in his hat and in the absence of any other more suitable lubricant spits upon his catheter when he wishes to urinate. That illustrates what we know of the immunity with which a certain number of individuals can go down to their graves with easy, comfortable catheter life.

Besides palliative treatment or catheter life there is a consideration of the care of the bladder in regard to which I think we ought to say a word or two, and that is a treatment of the individual himself. If you can only impress upon such a patient the fact that he is a "*prostatic*" and therefore has a weak point, and that he ought to go to his doctor at certain regular intervals in the same way and with the same cheerfulness that he would pay his fire-insurance premiums upon his house! He does not want a fire nor does he want future damage to his bladder. If he will pay periodic visits to his doctor who will overlook his bladder, many of these individuals who have been compelled to find their way to the hospital or to the office of the surgeon for operative procedure will escape it I believe. If the same attention were paid to a man who has a prostatic enlargement as is often paid to the heart of the individual who has such an organic weakness, I believe many a man would live out his time with simply palliative treatment.

Dr. Cabot in his admirable *résumé* of the palliative treatment mentioned to you the cases which constantly arise in which the very first symptom calling the attention of the individual to the fact that he is a prostatic is retention of urine. Of course I admit that his statement is correct; that is, there is a sudden congestion. In advancing life the valves in the prostatic and pelvic plexuses disappear and there is a direct flow of blood from the rectum and associated portions of the pelvis through the prostatic plexus. Hence congestion and narrowing of the urinary outlet may easily arise, and the first symptom of a positive character — he may have had indefinite symptoms to which he ought to have paid attention — that calls the man's attention to himself is retention of urine. Many of these persons can be relieved without the passage of the catheter. My rule in such cases is: prone position, pelvis elevated, high enemata and simply hot irrigation of the urethra through the meatus and repeated in an hour or two. In some of these individuals you will see a little spurt of urine following the irrigation and hear a sigh of relief on the part of the patient. It does not succeed in all cases but should be tried first.

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[1] See papers by Drs. Cabot and Watson, in the last number of the Journal, pp. 149-161.

Before I ask your patience to proceed to the consideration of the operative measures for the relief of prostatic enlargement, let me call attention to another fact. There should be a differentiation between the men whom we call among the "higher classes" and those of the lowly and poor and uneducated. If you will look over your experience with the prostatic cases and consider how many of them have been placed upon catheter life and how many of them go *comfortably* through, you will find that a certain proportion of them have that comfort, because of their comfortable surroundings, because of their intelligence, because education and whatnot have prepared in them a certain amount of tactile skill; they are able to pass the catheter and to understand your minute directions as to asepsis and the care of the bladder; therefore, a differentiation must be made between these and the men who have no education, no home, who are parasites upon the body politic, and who resort from one dispensary to another or are brought into the hospitals in a state of acute suffering. These are the individuals on whom we must attempt some operative procedure for radical relief, and this I think is the experience of all men who have hospital experience.

Now, when we come to the question of operative treatment, I find myself in a difficult position, in such a short time as this, to define to you the cases that shall be subjected to operative procedure and to which form. But, take the tying of the iliacs. I do not approve of it. I protest against it. I believe it is unnecessary. I have been told of two cases; in one of which a secondary amputation of the leg was required, and there was no relief to the urinary symptoms. He has just as much residual urine as he had at the time of operation, and now stumps about on one leg and passes his catheter as usual. The other case I heard of recently. His iliacs were tied on this theoretical belief that it would limit the growth of the prostate and cause its atrophy, and he, I am told, is just as bad as before.

Now, drainage certainly presents to us in many cases a most attractive field. The individual has no violent or dangerous attack made upon his pelvic organs, is enabled to retain his testicles, the shock is not very serious, and in many cases, I do not know in what proportion, but in some of them, perhaps in many of them, after prolonged drainage there is a certain amount of spontaneous urination and comparative comfort. I have in mind one individual whom I drained a year, and then he found himself able to urinate so readily and freely by the urethra that he requested the removal of the tube.

Drainage presents another opportunity, and that is in those acute, serious cases where we must attempt something for their immediate relief, or soon have symptoms of uremia because of the back hydrostatic pressure upon the kidneys. In those cases I think drainage offers to us the best means, and it is so simple that where you are in doubt I would commend it to you rather than repeated aspiration of dirty, thick, purulent urine. It can be done with cocaine anesthesia or by a mixed fluid of morphia and cocaine whose proportions I do not remember at this moment, but it can be done very easily and comfortably by cocaine anesthesia. On several occasions *in extremis* rather than to aspirate I have simply made use of a long trocar introduced quickly and easily by cocaine anesthesia behind the pubes, left it *in situ*, ran a bistoury down by the side of it until I made an opening in which I could get my little finger, slipped down a drainage-tube, through which urine and plus flowed out quickly, and the use of an antiseptic solution followed at once. Dr. Wishard, of Indianapolis, tells me he has facilitated his entrance to the bladder by having soldered on the trocar two fine wires that make a sort of grooved director, and he finds that his bistoury slips into the bladder without trouble.

To prostatectomy it seems to me not necessary to pay any attention at this time. The whole question has been ably presented, and the cases in which prostatectomy will be selected will have to be decided by the good sense, skill and experience of the surgeon.

But I wish to pay some attention in my remarks, to the comparatively new operation for the relief of prostatic enlargement by causing atrophy of the gland; namely, castration. The same thing without the removal of the testicles has been attempted in other ways, — ligation of the cords, torsion of the cords, subcutaneous torsion of the cords, the idea being to cut off the blood-supply from the testicles and cause their subsequent atrophy. Another individual has lately come forward with another suggestion. I am not prepared to comment upon it; I mention it. It may yet be found to have something of value. He suggests hypodermatic injections of cocaine solutions into the testicle itself. He gives no records, but claims that in all cases which he subjected to this treatment, twice a week for two months, there was evident atrophy of the testicle, diminution in the development of the spermatozoa, and after an indefinite time a decrease in the symptoms of urinary difficulty and great relief to the individual. I am not prepared to express any opinion upon it. But you see that the position of criticism which has been taken by certain men, particularly Belfield of Chicago, and others, toward this operation is bringing out other facts, some physiological and others pathological, in regard to the relation of the testicle to the enlarged prostate. Being one of those who have taken a conservative and critical position in regard to this operation, I think it is but fair to say that enough testimony has been advanced for me to believe that there are cases which will be benefited by the operation of castration.

Now, gentlemen, which will be the case that will be benefited by castration? I think that is the question which will be submitted to us and which we will have to consider with great care. For example, I was asked to see in consultation a man sixty-four years of age who had all the evidences of prostatic obstruction, and apparently it was very large. He was straining in a most agonizing manner to expel a few drachms of purulent urine every two hours. He had a cachectic look, with a bladder overdistended; and I was asked if this man was a case for castration, the surgeon having made up his mind to do the operation on a fixed day. I said I did not consider it a case for castration. His kidneys were suffering. He evidently needed something done immediately. Nevertheless castration was done, and the man died in a week. I did not consider that that was a case which should be left to the dangerous delay of atrophy, and atrophy only to be guessed at. I believe that man should have been treated immediately by drainage, and then subsequently, if necessary, or if it seemed wise and judicious, some operation for his radical relief instituted.

I was asked by a doctor to see his old father, who was suffering from retention of urine. It was as simple a thing as could be done to pass a catheter upon that old gentleman and relieve his immediate symptom; but I was told by the doctor that a gentleman, who is an orchidectomist in my city, had said the only way to relieve the old man was to remove his testicles. Now, I claim that those two cases alone require me to take a conservative position, and demand of the gentlemen who wish to do orchidectomy upon every occasion that they shall present good and sufficient reasons for the operation, because the man who is *suffering* will accept anything. I agree with Dr. Cabot that the operation is so seductive, and relief so enthusiastically stated, that we are liable to be placed in the same position as the profession was placed in the early and too frequent ovariotomies, of which we all know. I have listened with great interest to the paper by Dr. Edes this afternoon, and especially to that part in which he called attention to the failures in those unfortunate women who had been subjected to normal ovariotomy. Do not think I am an antagonist of the operation of castration. I say there are cases in which it will be useful and proper, but they must be most carefully considered.

Now, there is something yet to be ascertained in regard to the physiology of the testicle, and also in regard to its pathological facts, some of which we heard stated at the Niagara meeting of the American Association of Genito-Urinary Surgeons. For example, Dr. Wishard, of Indianapolis, a well-known and careful observer, stated that a patient whom he had castrated four and a half years ago for epithelioma of the penis had at this late day shown no evidence of atrophy of his prostate. Dr. Belfield also reported castration upon a dog, in which he had first opened the bladder to be sure there was enlargement of the prostate, then castrated the animal, and no atrophy of the prostate resulted. So that there are some facts we have yet to learn, and we must bear in mind that there are some doubtful questions when we come to consider any case presented to our notice whether we shall castrate him or not.

I wish to give my friend, Dr. Keyes, full opportunity, gentlemen; and without considering this operative treatment any further I want to call your attention to a question of treatment that I belive, if we can put it upon a sure foundation, if we can arrive at enough facts to take it from the realm of speculation, we will have settled in a very large majority of cases in the future generations this matter of enlargement of the prostate. I have no sympathy with Mr. Reginald Harrison, who claims that the prostatic enlargement is myomatous, muscular. I believe the prostate is purely a sexual organ. Its health, position, function, so far as we can arrive at it, indicate that it is a sexual organ. True, from a hypertrophic enlargement of the glandular portion there may extend an enlargement to other portions of the stroma, of the muscle, of the fibrous connective tissue, etc., but I believe its origin is to be traced distinctively to hyperactivity of its function. Now, I am going to present this question to you for your consideration as intelligent men, men in earnest for the welfare of your fellowmen, and to a body of men who represent, I believe, the profession of probably the most intelligent State in our Union. I want you to observe, gentlemen, for yourselves. Collect and place upon record facts by which the future generations of medical men can at least *direct* their studies. I believe that the enlargement of the prostate is not due to senility. We have enough facts to warrant my statement. Sir Henry Thompson says it rarely makes its appearance after seventy, and when it exists it has already reached considerable proportions by the age of seventy-five. I have seen prostatic enlargement in young men of about forty. Belfield reports a case at forty-three; Dr. Packard, of Philadelphia, at forty-five; Dr. Mudd removed an enormously enlarged prostate from a young man aged twenty-seven. It seems to me also there is a relation between the enlargement of the prostate and the age of fertility, and now I ask your attention to one fact, and that is this, that the enlargement of the prostate begins at a very much earlier stage than we have supposed. I believe it begins during the active period of sexual life. These are facts extremely difficult to arrive at. Every man knows his own sexual history, very often to his own great regret, and it is very difficult sometimes to get a correct statement of his sexual life from boyhood upward. If you will consider the facts that come to our knowledge as confidential advisers: to begin with early life, the habit of masturbation; secondly, excessive sexual indulgence, not the act of coitus, but that prolonged indulgence with women who permit sexual relations persisting for hours at a time, but do not permit intercourse; and thirdly, the varied excesses of married life, you will find sufficient cause for overgrowth of the prostate. In some individuals I have succeeded in getting at the inmost sexual life, and have followed it all the way up, but have not had enough cases to classify and present them to you in any other way than as a suggestion. I ask your attention to it, gentlemen, in order that in the future we may possibly arrive at some conclusion as to the *causation*, and therefore prophylactic treatment, of enlargement of the prostate.

Dr. Cabot has called attention to a question which has arisen in my own mind, and that is, what is the effect of castration upon these elderly men. In those castrated what is to be their relation to the body politic; to us? Some of them retain their power of intromission, sexual desire, but of course are not fertile. I think all these questions we as reasonable men, as scientific men, should consider as bearing upon the question of good morals.

DR. EDWARD L. KEYES, of New York City: On reading the title of the discussion by Drs. Cabot and

Watson, I concluded that its whole drift would hinge upon the question of the progress made in treatment, and I judged that it was to be the operative treatment; and whatever thoughts I have had upon the subject, and whatever ideas to present to you, were all centred around that focus, namely, the advances made in operative technique; but the discussion has turned entirely in different directions, and very little or nothing has been said upon this point. Perhaps I would better, therefore, confine myself to what has been gone over; but as I have brought a few specimens I may be allowed to touch both sides.

The very judicious and balanced presentation of the subject by Drs. Watson and Cabot I have nothing to say about; I give my assent heartily to the proposition that in any case, so far as catheter life *versus* operative treatment is concerned, the former should be presented and urged upon any one going into prostatic life, and he should not be tempted to undergo any operation whatsoever. This, when practicable, is the best way to treat prostatic enlargement, because it is the safest. If a patient uses his catheter properly, and understands how to manage his bladder, he will get on. Pitha's case, a man who had depended for urination entirely upon the catheter for forty-five years, is sufficient to point the moral. I had a patient who urinated exclusively through the catheter for twenty-one years, and when a man does not begin to use the catheter until after fifty if he goes twenty to thirty years longer he should be content. The least mortality given for orchidectomy — seven or eight per cent. — is to be thought of seriously in connection with the choice between catheter life and operative effort at cure.

Allow me one correction in the method of instituting catheter life, which Dr. Cabot quoted from me. I have changed my mind since I wrote what he quoted. Corrosive sublimate I still use. I have given up carbolic acid long ago. I do not like it; it is irritating; it does not destroy most bacteria until used in a five-per-cent. solution, which cannot be tolerated by the bladder. Corrosive sublimate is very much better as a paraciticide and antiseptic, but is often exceedingly irritating to the bladder. A 1 to 12,000 solution I have known to cause a cystitis that lasted a week. This is a serious bar to its routine employment. I constantly use it in the urethra. The urethra tolerates it much better than the bladder. A 1 to 8,000 solution is not too strong in the urethra, but I am very prone to use salicylic acid, one-half grain to the ounce, which does not irritate. A solution of it can be easily kept. One grain of salicylic acid will dissolve in a drachm of alcohol. One-half grain of salicylic acid to the ounce is strong enough, and one drachm of this solution in two ounces of water is just as good as Thiersch's solution; with it I flush the urethra constantly in instituting catheter life. And I always entirely empty the bladder at the first sitting, slowly, pinching the catheter, feeling the pulse, having the head low. I wash the bladder on the first occasion with 1 to 4,000 silver-nitrate solution. That will destroy any bacteria which one may have introduced into the bladder. If the urethra is flushed with salicylic acid, one-half grain to the ounce, as the catheter goes in, if the catheter is immaculate, if the bladder is emptied slowly and flushed out with 1 to 4,000 nitrate-of-silver solution and a little sterile salt solution left in, I believe no harm can come. I don't know what I shall do when I come to a case in which the bladder holds a gallon. I have no hesitation now in attacking any case of thin-walled bladder with enlarged prostate, which is the worst kind, that holds a quart, and I feel that I can put that man in ten days into catheter life with a sterile bladder if his prostatic urethra be not in a catarrhal condition from the start; that is, if the first time the catheter goes in it brings no blood upon withdrawal. If you produce traumatism, if there be stricture, much catarrh, granulations of the urethra, then it is vastly more difficult to institute catheter life without starting up a certain amount of catarrhal cystitis.

Now, perhaps I may turn to the subject I was intending to speak about, and mention the choice of operation. It seems to me if a man has come to the point of accepting prostatectomy, and is to have his prostate taken out, the choice of operation is exceedingly easy. If he has a prostate as large as an orange, considerable peripheral enlargement, it should be taken out, I think, above the bone. If he has practically no peripheral enlargement or a moderate amount, and still a considerable amount of deteriorative symptoms due to the prostate, I think he should be attacked through the perineum. This point is exceedingly clear in my mind: the mortality through the perineum is less. The method I use has not been referred to by Dr. Watson. I do not know that I have ever described it. I have used it several years. In attacking the prostate without peripheral enlargement I prefer to go through the perineum to the apex of the prostate. With a probe-pointed straight knife in the bladder and one finger in the rectum, I cut down the neck of the bladder laterally toward the finger, cutting entirely into, perhaps two-thirds the way through, the prostate. I then wash the rectal finger with permanganate of potash and oxalic acid, and proceed with the rest of the work. Then putting the finger into the slit, one appreciates what is the matter. It may be a bar, may be a prominent piece of one side or the other, or it may be a projecting third lobe. If there be a third lobe get it off by making another cut. Lately I have found another method which succeeds so well I shall try it in the future. It was a case of third lobe, which stuck up into the bladder three-fourths of an inch. I made the incision, and by a lateral movement of the finger the whole thing came off with a projecting tongue of mucous membrane running down along the floor of the prostate. The whole operation was done in ten minutes or less. The temperature never went above 100°. The rest of the prostate was smooth and normal. Recovery was prompt and perfect. The method I usually use is to cut out a V-shaped piece if there be a third lobe. If there be a bar I have an instrument which is put in shut, turned to one side, opened, and then by a little pulling backwards and forwards shut so as to cut out a considerable oval-shaped piece including the bar, making a distinct groove in the bottom of the prostate. If this method of pressing out with the finger a piece of the prostate can be done it will be the simplest operation, and it is very desirable in these old cases not to prolong etherization. Yearly as I go on I use less ether and more chloroform, and operate as quickly as possible. This operation can be done in ten minutes perhaps. A small amount of anesthesia is very desirable in cases of damaged kidney, and the old man's kidney is habitually damaged. The old method was to cut off the projecting portions with the scissors, and the methods I formerly used were to cut off with curved scissors first one side and then the other, and slip out a triangular bottom piece, packing when the hemorrhage was excessive. The operation I now do above the bone has recently been described at Niagara Falls by my associate, Dr. Fuller, who has perfected it and practically developed it in operative technique. The operation is exceedingly simple; it is all done in the dark at the bottom of a well of blood. One never sees anything after the first incision. The finger is carried down behind the bar into the bas-fond. Upon this with a scissors curved on the flat the bar is cut clean through until you get to the bottom of the bas-fond; with the finger you now commence and dissect off the bladder in the depths at the bottom of a pool of blood and work the finger about in all directions well forward under the bone until you can entirely shell out the prostate. The mucous membrane generally tears a little, but that makes no difference. I think it is better than cutting into the lateral lobes, because if you cut laterally you have pouches that do not drain. With a central cut your pouch drains backward, the best possible exit. By this method you may gouge out and draw up and pull away first one side and then the other in a very few minutes. This is a method of enucleation through a suprapubic opening, and is eminently adapted for use in very large prostates.

Another operation, which has also been used largely and advocated by Dr. Alexander of New York, is that through the perineal opening. It is not to open the mucous membrane of the prostatic urethra at all, but through the perineum by combined pressure through a suprapubic opening to enucleate the prostate. I have generally preferred to go in front through the bar, make an incision and eviscerate laterally. In a thin man it is an exceedingly simple operation and pretty rapid. I have never done the combined operation which Dr. Alexander does.

I wish to say a few words about orchidectomy. Everything that is new has a glamour about it, and is fortified by the faith-cure element which makes it advance at a more rapid rate than it deserves, and then it swings back too far the other way. I belong to the conservative group to which have attached themselves the three former speakers. But by no means do I believe that this operation is without merit. The emotional side, or æsthetic side, or poetical side of this question only exists in the imagination, because, when the prostate is eviscerated from within, or cut away freely, certainly the ejaculatory ducts are torn away and necessarily included in the scar, and the man is nearly as much a eunuch from this operation as from the removal of the testicles. It is a matter of sentiment, but still I think without sentiment we should return to our original condition of barbarity and tear each other's throats. Sentiment is life. I very much respect the perhaps very rank and crude expression of virility one old gentleman gave to me when I suggested orchidectomy to him as a possible means of relief. Said he: "No, doctor, I'll be damned if I do. I will die with 'em.". Still that is neither here nor there. I never have done this operation but once and I don't care to speak of the experience of others. These experiences are in print, and the only possible objection is that the greater number come from people who have no other claim to credibility than the fact that they write, that is, the majority of the reporters. If not a majority, at least many of the reporters are not skilled observers. A man in some obscure western town reports some seven or eight cases all getting well in a few weeks, skipping about, and one declaring that he wished he had got rid of the "damned old stones" before, because he was so much better sexually after their removal. That sort of case leaves an honest man permission to doubt. But there is something in it, how much we shall soon know, because everybody is doing it, and it is being done too much.

I have offered the operation to a certain number of people, discussing the question and placing it before them, and I never have yet found anybody in the past year since the case of Smith willing to try it until finally, one day about two months ago, a handsome old gentleman came in and asked me about it. He said he had come to have the operation done. He was a bachelor about sixty-five, and apparently in very good health. I had encountered him with suppurative testicle many years before, in connection with the use of a catheter not sterilized. Then I had seen him a number of times at long intervals with slight attacks of recurrent prostatic suppuration in a mild catarrhal way, giving vesical spasm, never laying him up. He came back with another of these attacks, said he was getting rather tired of it, had to use his catheter every four hours, and he was getting another attack. He wanted to have his testicles taken out; said he had a relative studying medicine who told him about it, and he was full of the idea. I thought it better to get rid of the commencing attack before taking the testicles out. He said he had not used his testicles for years and never intended to again. I told him I thought it best to try the old way and see if I could not get the bladder into a condition of quietude before operating. I tried a few times and failed to make any advance. I think it is not proper to take out the testicles in a condition of advancing catarrhal disturbance at the neck of the bladder. This patient over-persuaded me and I took out his testicles under cocaine. He said it did not hurt as much as when the abscess was opened years before. His spasmodic calls to urinate continued with the same violence; the bladder was irrigated each time the catheter was used, about every three hours. He had no stone, no tumor, no ulceration, nothing in the bladder, a moderately enlarged prostate and a moderate amount of catarrhal cystitis in the prostatic sinus. He was somewhat of a bleeder. A little oozing formed a clot in the scrotum, and one side was opened the next morning and a moderate clot turned out. Nothing happened to the wound and nothing to the operation. But he continued to strain with increasing violence. Then I insisted that the bladder should be drained. He would not hear of it. The family also objected. About the end of the first week he strained out a hemorrhoid which became strangulated and edematous and from that a slight erythematous blush and a sort of ambulatory erysipelas ensued. He strained and strained and strained his life out; he died in the fifth week. The bladder never cleared up. I searched again and found nothing in the bladder. No autopsy was allowed. The catheter finally was tied in for a week, and that made matters worse. He strained all the time. The catheter was taken out and passed every two hours, twelve times a day, and between these two hours he had habitually three intense spasms so that I made out that he had forty-eight intense vesical spasms in the course of twenty-four hours, and he finally died, not allowing himself to be drained. There were consultations held, but nobody would uphold me in insisting on drainage. Still I do not condemn the operation. I do not know enough about it. But it seems to me that on many accounts it is best to withhold judgment a little while and go slowly, and certainly not to operate on a man who is in a condition at all of urgency or emergency or progressive vesical spasm even if just commencing. He should be operated on in periods of quiescence or periods of decline, because the operation does not always produce this immediate relief which we are led to expect when we read the brilliant articles where the relief commenced the third day after the operation.

Dr. Abner Post, of Boston: When a man is called upon to continue the discussion at the end of two and a half hours, and as a fifth speaker, the first kindness he can pay his audience is to tell them he will detain them but a very few moments.

I cannot believe that the operation of orchidectomy, as my learned friends have chosen to call it, is to entirely supplant all other operations. But it is the operation which at the present moment especially attracts our attention, and the few words that I shall say this afternoon will be in reference to that part of the discussion, and in order that I may be sure not to repeat what the gentlemen have said before me, I will confine myself by your consent chiefly to my own experience in the matter. I have castrated two men for enlarged prostate and have advised as a consultant the operation in a third patient. My own patients are somewhat interesting.

The first was a man of seventy-six years of age, who was under my observation for two weeks before the operation was done. He was entirely unable to pass his urine himself, was obliged to be catheterized not by himself, but by an attendant, catheterization five times in the twenty-four hours being a necessity and keeping him barely comfortable. He was constantly begging for the use of the catheter. His pain and discomfort were very great. He was a feeble old man, was confined to bed, and his complaints in regard to his head were very great. He kept informing us that he should go crazy if he did not have relief from his bladder, the irritation was so persistent and so excessive. Treatment in hospital in bed with careful systematic catheterization and washing of the bladder, for his urine was also purulent, failed to give him relief; and at the end of sixteen days, in spite of a general febrile condition, I castrated. I cannot say that I had any great hopes of relief or that I urged the operation. He and his friends would have consented to it long before I did it. At the time of the operation I told them what I believed to be true, that the operation would I thought in itself prove of comparatively little moment, and that there was little danger of death as a direct result, and that in his case it was certainly worth an attempt to give him relief. The castration was done with a minimum of ether and with the greatest rapidity. I do not remember exactly how long the operation itself took; it was but a very short time, but from the moment the ether was put over his nose until he was back in his bed in the ward was something like thirty minutes. I was surprised in the afternoon to find the old gentleman in a state of extreme danger, with a temperature of 104° and a pulse of 150, and I thought I had certainly killed him. The next morning, however, he had recovered, and he is to-day an example of the beneficial effects of the operation, which was done nearly three weeks ago. He can at present pass a fair amount of urine. The greatest amount he has passed is something like five ounces. He does not empty his bladder; there is still residual urine. There is still pus in his urine. He has to be catheterized once daily. His mental condition has changed wonderfully for the better. He is greatly encouraged, feels happier, sits up two or three hours at a time. The operation in his case is certainly a success. It has not restored him to youth; it has not entirely restored his bladder; it has restored him to a condition where he is partially independent of the physician. I cannot help thinking that he rejoices in the way that patients often do over the result of an operation, and that his mental condition is an extremely favorable one towards the operation, so that he is inclined to exaggerate its effects. He is quite garrulous in regard to it, and advises a repetition of the operation to every old gentleman similarly affected.

My second operation was in a man of fifty-nine. The prostate in his case was not very much enlarged as felt through the rectum, but there was a distinct bar at the neck of the bladder to the entrance of the catheter. He was obliged to pass water every hour. His amount of residual urine was something like six ounces. He asked for the operation. I should not have suggested it to a man of his years and with his general condition. It seemed to me there was probably some other factor which entered into the frequent urination. I kept him a fortnight before operating. I could not find any satisfactory explanation of his frequent urination short of the prostatic trouble. I castrated him about the same time as the first man. The operation proved in him a mere bagatelle, followed by no rise of temperature. I cannot feel very certain by my finger of any diminution in the size of the prostate, but his intervals between urination have increased decidedly, so that the average is two hours instead of one. He often goes three and a half hours. He does not entirely empty his bladder. There is something like one-half of the former amount of residual urine, but a good amount of the pain and discomfort now, he says, has disappeared. I must say that he expresses himself a good deal more favorably in regard to the effects of the operation than seems to me to be justified.

In the third case in which I advised its performance, I know the operation has been performed, but I have no details since. I mention these cases because I think they will show fairly well something of the risks, and the fact that the brilliant cases must go side by side with those which are less brilliant. I speak of them more particularly to introduce another small series of cases in which I have refused double castration, and it seems to me that those are more important for a moment's consideration than the cases in which castration has been done. Gentlemen have reported the cases in which they have performed castration, but have not reported the cases in which they have refused. The cases in which I have advised against castration are:

First, the cases which are comfortable with the catheter. The gentlemen who have preceded me have agreed that the catheter life, such as we have depended on before, is still to be depended on, and these were cases who could pass their own catheters, and cases in which it was improper to advise an operation, which, looking at it in as favorable a light as we can, I think we must still consider as questionable in its results.

Second, were the cases of moderate age. I have now a gentleman of fifty-seven who has a well-marked prostate, who is practically dependent upon the catheter, who expects to be married during the coming summer, and I did not feel that a case of that sort was one in which castration should be advised.

A third class of cases, of which I recall two at the present moment, are cases in which the prostatic disease seemed only a minor incident in the degeneration of old age. There was one old man transferred to me at the hospital from the medical side. He had entered the hospital I hardly know for what, but it was found that he had an enlarged prostate and a certain amount of residual urine, and an operation was suggested. Really, in that case, although he certainly had an enlarged prostate and could not empty his bladder, that seemed to me only an incident. His greater trouble was the feebleness and stiffness due to old age, and I could not imagine that he could really be benefited by it. He was not even in a condition in which the actual use of the catheter was a necessity.

Fourth, is a case in which there is marked disease of the kidneys, in which it seemed to me that was of more importance than the prostatic disease itself.

Fifth, is another case in which the pain connected with micturition, etc., was extreme; it suggested something more than an enlargement of the prostate, with its attending evils. It was excessive. The patient finally got so that he used ether, or wanted to, every time he passed water. It seemed to me that that was an improper case for castration; in the first place, because the relief to be given that man must be immediate, and I recommended and carried out perineal drainage, as mentioned by Dr. Bangs. There was another reason for doing that. His symptoms were exceptional, and it seemed to me there must be some other explanation, and it was necessary to explore in some way the bladder. A stone-searcher could not be entered, and after the perineal incision it was with the greatest difficulty that I entered my finger. There was no stone, and I could not make out malignant disease of the prostate, but the post-mortem examination showed that there was malignant disease of the bladder. It was spread over the walls of the bladder, starting from the prostate, but involving rather the walls of the bladder than the prostate itself.

There is another case in which I have refused to operate because of double inguinal hernia. It seemed to me that the additional gravity involved in that case is sufficient to rule out the operation.

With these exceptions to the universal application of castration, and doubtless there are others, it is plain that there is still field for the other operations which have been mentioned so favorably and at such length. There is one thing more I want to say in regard to the matter of castration, and that is the temptation to do it loosely and without proper regard to the individual patient is extremely great. It is so easy to consider any old gentleman who has trouble with his urine as a prostatic and to proceed to castration, that the temptation to superficial work is exreme, and I perhaps may be excused if I make mention of certain cases which I have myself seen regarded as prostatic when really disease of the prostate was absent. These cases include, in the first place, cases of deep stricture. I have seen one or two cases of deep stricture which certainly presented the ordinary symptoms of prostatic enlargement, occurring as they did in men long past sixty. I have seen one or two cases of locomotor ataxia with marked bladder symptoms where I thought really a person might be excused for thinking at least of prostatic enlargement. At times it is extremely easy to mistake cancer of the prostate for chronic enlargement, and I can remember at least one case where there was a difference of opinion as to whether there was cancerous disease or not, which was settled only by post-mortem examination. And I have an idea that I have seen certain cases of rectal disease in old men which also so interfered with the bladder function that it was possible to consider them as cases of prostatic disease.

One might almost say that it is more necessary to be careful about diagnosis in cases of castration than when some other operation is proposed. The operation through the perineum or over the pubes allows direct access to the prostate, and we are able to correct our diagnosis and adapt the operation to the condition present, but castration is done at a distance from the seat of disease, and after it is over we know no more about the actual condition than before.

Without going further into the subject, let me condense what I have tried to say by simply repeating that, while castration promises so much in certain cases, it is by no means a cure-all, and is not to be entered upon rashly nor without proper consideration of the individual case, and above all, not without a careful diagnosis.

Dr. Gardner W. Allen, of Boston: I should like to speak very briefly of a point in diagnosis which seems to me important, although it probably concerns only a small number of cases. This matter was especially impressed upon me at the recent meeting of the American Association of Genito-Urinary Surgeons at Niagara Falls, by Dr. Belfield of Chicago, who called attention to some of the consequences of careless and hasty diagnosis. He mentioned cases which presented the ordinary symptoms of enlarged prostate, and had been treated as such before coming under his care. Examination showed the trouble to be due to inflammation of the prostate and its appendages, especially the seminal vesicles, which were swollen and distended with fluid, forming a large part of the tumor which had been mistaken for hypertrophied prostate. One of these cases had been castrated without relief at the end of two months, but had begun to improve on stripping the vesicles; it was too early, however, to give final results. Dr. Belfield thinks that although there may be some enlargement of the prostate in these cases it is due to inflammation and not to hypertrophy, and is best treated by milking the prostate and its appendages by means of a finger in the rectum.

At the same meeting Dr. Fuller of New York exhibited some photographs of dissections which showed in a beautiful manner how the distended vesicles may simulate enlargement of the prostate.

I have observed this condition not infrequently, and have in mind one case in which a diagnosis of enlarged prostate had been made, both lobes being apparently greatly hypertrophied, forming conical tumors with a deep sulcus between them. When the vesicles had been emptied the prostate was found to be of normal size and form. It seems to me that this matter deserves a place among the numerous factors that are to be borne in mind in the study of prostatic enlargement.

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MAINE MEDICAL ASSOCIATION.

FORTY-THIRD ANNUAL MEETING, PORTLAND, JUNE 5, 6 AND 7, 1895.

The Association met as usual in Common Council Chamber, City Building, and was called to order at 10.15 A. M., by the President, **Dr. W. P. Giddings**, of Gardiner.

After prayer by the **Rev. Mr. Sampson** of the Free Street Baptist Church and the disposal of some routine business,

Dr. R. D. Bibber, of Bath, reported

A UNIQUE CASE OF APOPLEXY,

interesting in character from the fact that at intervals of a few hours during the first day or two, consciousness was regained, and entire use of the paralyzed left side of the face, left arm and leg for periods of five or ten minutes at a time. Recovery took place without unusual symptoms, and the patient died a year later from another stroke.

CEREBRAL EMBOLISM

was the subject of a paper by **Dr. John F. Hilton**, of Lewiston.

The writer urged the idea that emboli oftenest had their origin in thrombi, and that the distribution of the left common carotid was most frequently their seat from its direct anatomical relation to the current in the aorta.

Dr. Willis F. Hart, of Camden, presented a paper on

NEURASTHENIA,

special stress being laid upon over mental crowding of school-children as a predisposing factor.

Dr. S. C. Gordon, of Portland, thought the idea of forced feeding was too much insisted upon, a practice which often defeated its own end by weakening the patient's powers of digestion. He believed nature to be a good guide both as to the character and amount of food, and certainly would not push the feeding, if the digestive capacity did not seem equal to it.

AFTERNOON SESSION.

Delegates were presented from New Hampshire.

The President, **Dr. W. P. Giddings**, delivered an address, upon "A Few of the Accomplishments of Associated Forces, Natural and Intellectual."

Dr. F. C. Thayer, of Waterville, read a paper advocating

CASTRATION FOR THE RELIEF OF HYPERTROPHIED PROSTATE.[1]

The general tone of the discussion was favorable to the operation.

Dr. W. L. Dana spoke of the importance of frequent examination to determine the amount of residual urine, which would be an index of the amount of atrophy of the gland.

Dr. S. C. Gordon criticised the tendency to base expectations after this operation upon assumed influence of ovariotomy upon fibroids. He said it was not true, as a rule, that the removal of ovaries causes atrophy of fibroids. The facts relative to eunuchs and geldings were of more value than any to be derived from the effects of ovariotomy.

Dr. W. K. Oakes, of Auburn, read a paper on

VAGINAL HYSTERECTOMY.

The vaginal method was urged as preferable for cases of purulent salpingitis, small ovarian cysts and small fibroids. It was regarded as especially useful and safe in those forms of bilateral suppurative disease with strong adhesions. The results were claimed to be better than by abdominal incision,—attended with less shock, less suffering, shorter period of convalescence and comparative freedom from dangers of hernia and necessity of an abdominal supporter.

Dr. J. F. Thompson, of Portland, read a paper on

PYOSALPINX.

Distention of the tube to the size of a uterus at the third month of pregnancy, was said to mark the limit of enlargement before bursting.

Decomposition and infection of retention *débris* after miscarriage or abortion was given equal place with gonorrhea as a causative agent.

Preventive treatment by removal of inflammatory conditions in any part of the genital tract was regarded as the most important.

Distention by pus should be relieved by vaginal puncture to anticipate spontaneous rupture. Such treatment is only palliative, and should be followed by complete removal of the diseased organs, with drainage if there has been much oozing or soiling of the peritoneum with escaping pus.

Diagnosis from typhoid fever is not to be lost sight of, long-continued fever being strong presumptive evidence of inflammatory action in the tubes.

Complete removal of the uterus in these cases by Gordon's method is followed by better results, both local and systemic, than is simple Tait's operation, especially in cases of long-continued suppurative endometritis or marked retro-displacement of uterus with endometritis. Cases of briefer duration, or where there is no displacement, may be cured by removal of the appendages, preceeded by thorough curetting of the endometrium.

Dr. S. C. Gordon favored hysterectomy in addition to removal of appendages. He had seen tubes resuming their function after early evacuation of pus by vaginal puncture.

Dr. A. P. Dudley, of New York, thought the proper line of work during the next ten years ought to be preventive rather than destructive. Surgery that cannot save anything to the woman but the vagina is poor surgery.

Dr. S. H. Weeks, of Portland, agreed with Dr. Dudley. He would remove ligaments with tubes. He preferred to save the cervix as a support in the pelvic floor. He would leave any part of uterus or tube or ovary which was sound.

Dr. Woods Hutchinson, of Des Moines, Ia., being invited to take part in the discussion, said 85 per cent. of all cases were due to gonorrheal infection, the remainder to tubercle bacilli.

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[1] See page 182 of the Journal.

Dr. Thompson, in closing, expressed his belief that there was more butchery done in the name of conservative surgery than good surgery. The best surgery is that which conserves the health and safety of the woman for the longest time. He thought curettage of a uterus without removal of appendages for these cases would amount to about as much as curetting the rectum to cure an appendicitis.

THYROID EXTRACT IN CASES OF MYXEDEMA.

Dr. J. K. P. Rogers reported the relief of all symptoms of a case of myxedema by repeated injections of thyroid extract.

Several gentlemen spoke of the good results attendant upon this method, but agreed that continued use during life was necessary to prevent recurrence.

Dr. Alfred King, of Portland, read a paper on

HENNEQUIN'S METHOD OF TREATING FRACTURES OF THE THIGH.

The paper was illustrated by an exhibition of the apparatus, and its application to a supposed patient. It consisted essentially in making traction upon the thigh just above the condyles by means of a cord and weight attached to a cravat bandage. Rotation is counteracted by shifting the attachment of the cord from side to side.

Interference with the traction by the leg, the thigh being at an angle of forty degrees, is prevented by removing a segment of the mattress. The thigh is then encased in any well-fitting supportive and coaptation splints, and kept up by supports from below.

This method was also advised as efficient for traction in treatment of hip-joint disease. In fracture it is said to meet all requirements. Selecting the best possible *point d'appui*, and transmitting traction directly to the desired point, rotation is prevented and accidental resistances are avoided. Its advantage over Buck's extension cannot be over-estimated.

SECOND DAY.—THURSDAY.

Dr. S. H. Weeks, of Portland, read an exhaustive paper upon

TUBERCULAR DISEASE OF THE KNEE-JOINT.

In the discussion of treatment, prominence was given to the anti-tubercular action of iodoform injections, fixation by plaster-of-Paris or splints, and traction to overcome muscular spasm. Excision is a last resort after a faithful trial of mechanical measures.

A lively discussion followed the report of a special committee on

REVISION OF THE CODE OF ETHICS.

Two reports were submitted.

The majority report eliminated from the old code all that related to duties of patients and the public, and suggested several changes in the section relating to consultations, making a more specific allusion to the various irregulars than does the present code, and removing any doubt as to whom was meant in the proscription. It also recognized the right of a practitioner to respond in emergencies when in his judgment the demands of humanity justified it.

The minority report was identical with the majority except that it removed any and all restrictions from consultations, when the consultant was an educated man and of good repute in the community in which he lived.

Neither report met with much favor with those who participated in the discussion. The Committee used the word "liberal" as applied to medical education instead of the term "regular." This was criticised as "indefinite," notwithstanding it was easily demonstrated that a "regular" medical education is not necessarily a liberal one.

With two or three exceptions, the main question, as usual, was not discussed. A strong minority was in favor of laying the majority report upon the table for further discussion, there being in the Association a strong desire to have a code which is essentially a statement of the principles which ought to govern the practice of medicine among educated and honorable physicians. Finally, it was stated that the American Medical Association had indefinitely postponed the whole question, and influenced by this potent fact, the Association voted (40 to 16) to indefinitely postpone all consideration of those parts of the reports which suggested any changes in the code.

The Committee made two recommendations, which were unanimously adopted. One requires applicants for membership, before recommendation by the censors, to demonstrate to the censors their familiarity with the code, and in their presence subscribe to its requirements. The other urges the faculties of medical schools to give to students some instruction in the principles of the code, before sending them out as practitioners.

The first of these, if followed out, ought to demonstrate the foolishness, to say the least, of much that is irrelevant in the present code, and may be confidently reckoned upon to make the absurdity of certain parts of it more apparent than now.

AFTERNOON SESSION.

Dr. J. M. Jonah, of Eastport, read a paper entitled,

CHIPS FROM THIRTY YEARS' EXPERIENCE.

Dr. C. E. Williams, of Auburn, read a paper on

THE RADICAL CURE OF INGUINAL HERNIA.

The radical operation of opening the sac, returning its contents, drawing it down, suturing by buried kangaroo tendon, and removing it, was the one advised.

DISPLACEMENT OF THE GALL-BLADDER.

Dr. John F. Thompson, of Portland, reported a case of gall-bladder displaced into the right inguinal region, with symptoms so close to those of appendicitis that an operation was undertaken which disclosed the true nature of the case.

Officers for the ensuing year were elected as follows: President, Dr. L. W. Pendleton, Portland. First Vice-President, Dr. D. A. Robinson, Bangor. Second Vice-President, Dr. C. E. Williams, Auburn. Corresponding Secretary, Dr. W. T. Goodale, Saco. Board of Censors: Drs. C. O. Hunt, Portland; A. Mitchell, Brunswick; J. L. Bennett, Bridgton; B. F. Bradbury, Norway; W. B. Moulton, Portland. Committee on Publication: Drs. C. D. Smith, Portland; C. A. Ring, Portland; F. C. Thayer, Waterville; A. G. Young, Augusta; J. L. M. Willis, Eliot. Business Committee: Drs. Addison S. Thayer, Portland; Alfred King, Portland.

The Recording Secretary, Dr. C. D. Smith, and the Treasurer, Dr. A. S. Thayer, continue.

The Necrologist reported the deaths during the year of Drs. M. B. Cobb, Biddeford; J. W. Toward, Augusta; Wm. Osgood, North Yarmouth; Henry H. Hunt, Portland; Fred C. Perkins, Augusta; I. M. Eveleth, Waldoboro'.

Dr. C. A. Peaslee, of Wiscasset, read a paper reporting a

CASE OF PULMONARY TUBERCULOSIS CURED BY THE CURASSO TREATMENT.

The discussion elicited the fact that this method has been generally tried in this State, but with no very satisfactory results, even in hospital practice.

THE SEQUELÆ OF DIPHTHERIA.

Dr. Jas. A. Spalding, of Portland, presented a paper on this subject.

EVENING SESSION.

At 8 o'clock **Dr. A. K. P. Meserve**, of Portland, delivered the Annual Oration, dealing with the

RECIPROCAL INFLUENCE OF THE MASSES AND THE INDIVIDUAL.

Dr. D. E. Parsons, of Oakland, read a paper on

A CLINICAL STUDY OF TYPHOID FEVER.

The writer discussed the possibility of a non-bacillar origin of the disease from the standpoint of the country practitioner.

THIRD DAY.— FRIDAY.

In response to a communication from the Philadelphia County Medical Society, the Association passed a resolution condemning the use of the columns of the *Journal of the American Medical Association* to advertise proprietary medicines.

The Board of Censors reported, finally fixing the date of the next annual meeting on the second Wednesday, Thursday and Friday in June, 1896; appointing Dr. A. P. Dudley, of New York, a former resident of Maine and still a member of the Association, as Orator; and naming the following delegates to other medical societies:

American Medical Association: Drs. Alonzo Garcelon, Lewiston; Geo. H. Cummings, Portland; C. W. Foster, Woodford's. Vermont: Drs. S. C. Gordon, Portland; J. A. Donovan, Lewiston. Massachusetts: Drs. Aug. S. Thayer, Portland; Alfred King, Portland. Rhode Island: Drs. Daniel Driscoll, Sidney; W. H. Bradford, Portland. Connecticut: Drs. W. E. Baxter, Bangor; W. E. Elwell, Togus. New Hampshire: Drs. W. D. Williamson, Gorham, N. H.; Geo. C. Parker, Winthrop. New York: Drs. R. D. Bibber, Bath; W. B. Small, Lewiston; W. L. Dana, Portland. New Brunswick: Drs. S. B. Hunter, Machias; C. E. Williams, Houlton. Maritime Medical Society: Drs. B. B. Foster, Portland; J. M. Jonah, Eastport. Visitors to Maine Insane Hospital: Drs. E. M. Fuller, Bath; A. K. P. Meserve, Portland: G. M. Woodcock, Bangor. Portland School for Medical Instruction: Drs. B. B. Foster, Portland; W. K. Oakes, Auburn. Medical School of Maine (two years): Dr. E. S. Coan, Auburn.

The session was unusually well attended, notwithstanding the absence of any social features, and the papers were of unusual merit. Fourteen new members were elected.

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THE PROXIMATE CAUSE OF SENESCENCE AND DEATH: WHY THESE ARE NECESSARY.

There has been much speculation as to the cause of old age and death. To many it is a sufficient explanation that such is nature's law. Involution and dissolution are always the complement of evolution.

Two quite remarkable treatises have recently appeared which attempt a solution, based on the most general data of biology, of the questions "Why do men grow old? Why do they die?" The one is by Sabatier, "Essai sur la Vie et la Mort"; the other is by Boy-Teissier, "On Senility in General."[1] Boy-Teissier adopts the standpoint of Sabatier, applying his theory to the explanation of old age and death. Let us see what that theory is.

Biologists have insisted on the extraordinary vitality of living undifferentiated protoplasm. Weismann says that monocellular beings (infusoria, monads) do not die; they multiply incessantly by bipartition, and live on in their descendants. In the metazoa, a part of the organism remains in this undifferentiated state — the reproductive cells, the germ-plasm — and is immortal (that is, potentially immortal). Maupas was the first to show that though in the protozoa the individuals may long multiply by division and thus continue existence, yet the cycle is destined eventually to terminate by senescence and death, which, however, may be escaped by "Karyogamic rejuvenescence," when a new cycle begins.

Living matter, then, is not necessarily subject to decay, and in the simplest forms prolongs its existence indefinitely by various modes of genesis; nay more, many of the fungi multiply by spores without sexual contact, and multitudes of the higher vegetable organisms, as the hop, the vine, the weeping willow are susceptible of indefinite "aganous" reproduction. The attributes of living matter are irritability, mobility, the faculty of exchange with its environment and the power of reproduction. But what is essential to its existence and continuance, and what especially distinguishes living matter from dead is a property which we may with Sabatier call a "bait power" (*pouvoir d'amorce*). As bait attracts fishes, so living matter has the power of attracting elements like itself, and incorporating them intimately into its substance, and thus its constant losses are made good. We may compare life and nutrition to a *whirlpool* (*tourbillon vital*, Flourens), whereby new particles are constantly drawn into the interior, while from the periphery dislocated particles are thrown off (assimilation and disassimilation).

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[1] Sabatier: Essai sur la Vie et la Mort, Paris, 1893. Boy-Teissier: Maladies des Veillards, etc., Paris, 1895.

The minutest portion of living matter has this faculty, and thus possesses the requisite condition for increasing its mass and perpetuating itself.

We have now to study the effects of differentiation of the protoplasm into cytoplasm and into nucleus. This is probably one of the first differentiations, as the lowest forms are destitute of a cell wall and nucleus, while endowed with remarkable powers of vital resistance and multiplication. The differentiation of the nucleus has probably "increased the value of the protoplasmic labor"; "has enabled the organism to adapt itself to the varied conditions of a higher life, to become a laboratory fit for the fabrication of superior and special products, having more of aptitude for action." Here then is the *qualitative* influence of this first differentiation.

What has been also its *quantitative* influence, that is, its influence on the faculty of growth and multiplication of the protoplasm, has this been increased or diminished? There is good reason to believe that it has diminished, for it is in the inferior micro-organisms, *those which present the nuclear differentiation the least accentuated*, that these powers are the most excited (bacteria, algæ, lower fungi).

Sabatier deems himself warranted here in stating as a law that *there is an inverse relation between the degree of nuclear differentiation and the power of growth.* It is in the nucleus that we first notice marks of senescence in the ciliated infusoria. The nuclei are approaching a state of molecular equilibrium — a static condition — and this equilibrium can now only be overthrown by "Karyogamic" interplasmic associations which reëstablish active molecular change by mixing the slightly different physiological units of slightly different individuals (Herbert Spencer). From this, the way is easy to the generalization that the more the cell is perfected, complicated, differentiated, the more its power of self-nutrition "its bait power" is diminished; what is gained in *quality* is lost in *quantity*. Sabatier alludes in this connection to the known fact that in animal pathology there is often a return to more simple, more embryonic and more primitive states of the cell (carcinoma and sarcoma).

He also points out that in the metazoa the primitive cell, the protoplasm capable of playing the part of *amorce* (bait) diminishes progressively in quantity in the differentiated cells. Take, for instance, the muscle fibres. These are not primary tissues, but they result from modifications of epithelial or connective-tissue cells. These modifications consist in changes of form of the cell which becomes more or less elongated, and especially in the deposition of a new substance, muscular substance or sarcoplasm, susceptible of contraction or relaxation. The muscle fibre is a complex element, composed of a primary cellular part small and relatively inconspicuous, and a muscular part more or less developed; and always in the animal scale there is a tendency toward increasing predominance of the muscular substance over the primarily cellular portion, which, however, more completely disappears. In the development of nerve, we may also follow the deposition of secondary nerve-substance by the side of the primordial cell substance. The same may be said of the more solid tissues, bone and cartilage, the formed material augmenting in volume while the primary cell element shrinks to small dimensions. It may be said of all these textures as of the secreting cells (liver, pancreas, etc.), that the original protoplasm (cytoplasm and nucleus) has little by little given way to products of its own activity with highly specialized functions and properties, but poorly fitted, however, to protect themselves and maintain the integrity of their structure.

"This new mode of activity," says Sabatier, "due to evolutionary tendency, is developed by selection, by usage, by exercise, by habit. Little by little the protoplasm has lost its primitive nutritive function which has been modified to the profit of its secondary differentiated function. It has ceased more and more to make living matter properly so called, in order to make contractile, sentient, secreting matter. . . . It has become more and more incapable of reconstructing and repairing itself; and the machine which was originally made to escape wearing out, has become a machine fitted to wear out and perish." Boy-Teissier insists "that it is not the years one has lived which are the causes of old age; the number of years one lives is in strict dependence on the coefficient of vital resistance," and this vital resistance is just what suffers diminution by the differentiations and specializations of living matter "which mark the first step towards death." These new adaptations and specializations can only arise by a transformation of a part of the energies of living protoplasm, so that the latter has less power to oppose destructive agencies. Lowering of vital resistance means retardation of nutrition, and this leads to changes of texture, to atrophy, to degenerations, to sclerosis.

The fact is emphasized by both Boy-Teissier and Sabatier that the tissues of man and the higher animals are poorly endowed with the power of regeneration. In the nervous centres, for instance, which represent a very high differentiation, all regeneration of and by the nervous elements themselves is practically *nil*, and repair is effected by the formation of cicatricial tissue, that is, connective tissue, in the striated muscles and in the true skin; reparation is also cicatricial, while in the unstriped muscle (less highly differentiated) the tissue may regenerate itself (this is especially the case in young subjects and in the inferior metazoa). The epithelial elements (epidermis, lining of alimentary canal, renal epithelium) are less specialized, and have not altogether lost the faculty of regeneration, though the more developed gland epithelium is with more difficulty repaired. In the liver the regeneration of an entire acinus is impossible — at least a third of the acinus must remain (Podwissozky). In the kidney there is a variable limit to the regeneration of epithelium.

The connective tissue, at least in its primary, unmodified form, to which "cellular tissue" is an approach, long retains its vital energies in a high degree, and becomes a needed means of repair in traumatisms and destructions of the true parenchyma. "It is," says Sabatier, "the matrix from which come the elements of the other tissues; it is during adult life the enfeebled representative of the neutral blastodermic cells; it is a post-embryonal blastoderm." By the same law which causes the connective-tissue cells (and in this category Cohnheim would include the leucocytes of the blood) to repair the losses of the nobler elements after traumatisms, we see connective tissue taking the place of the nobler elements when these atrophy, and hence an explanation of senile sclerosis is obvious.

The constructive processes manifested in compensatory hypertrophy (as of the heart in valvular obstruction, of the kidney when its fellow has been destroyed) is according to Sabatier no exception to the law enunciated, although there is a marked contrast between this energy and the feebleness of reparative construction in cases of lesion. The hypertrophy and hyperplasia are the result of excessive constructive activity of the connective-tissue cells and perhaps of the leucocytes, which under stimulation of a physiological kind originating in the necessity for increased functional activity of an organ, "return to the conditions of embryonal life, acquiring the energies and the power of tissue formation peculiar to the early stages."

We have not time to follow out the numerous lines of inquiry which this subject so full of interest presents, and must refer to the authors whom we have cited, and who have drawn from all the reserves of biology to fortify their positions.

OVER-OPERATING IN GYNECOLOGY.

THERE can be but little doubt in the minds of conservative physicians that at the present day the pendulum of practice has swung somewhat too far in the direction of the operative treatment of the diseases of the female generative organs.

Excision of the uterine appendages is recommended for slight inflammatory disease, often without previous trial of conservative treatment. Operative gynecologists in excellent repute, affirm that the only effective treatment of retrodeviation of the uterus is laparotomy and suture of the fundus uteri to the abdominal wall. Total ablation of the uterus is recommended for the endometritis which sometimes persists after the removal of the appendages for inflammatory disease, and other examples might be multiplied.

The present prominence of the operative side of gynecology, is doubtless in part a healthy reaction from the unsatisfactory results of the older, so-called medical gynecology, when applied in cases too severe to be cured or benefited by it; and there can be no doubt that the operative work in gynecology, made possible by the antiseptic treatment of wounds, has been an immense boon to suffering woman. There is not the slightest doubt either that the good accomplished by the modern operative measures in the main far outweighs the evils produced by their occasional careless, unskilful and over-enthusiastic application. The operative side of gynecology is attractive and progressive, and the field for it is large; but unfortunately, not so large as to afford sufficient operative experience to all the enthusiastic workers who enter it. These latter, perhaps without recognizing the fact themselves, and all the while actuated by the highest motives, are apt to be over-influenced by the brilliancy of successful operative results; perhaps they never have had the opportunity of following cases medically treated to their slowly procured but successful termination. These circumstances all tend to influence them to choose operative methods, and often, perhaps, to underrate the dangers of operation, and their own responsibility in advising it. Then there is the reputation of having performed the operations, and the larger fees which, perhaps unconsciously, become factors in the case.

A fact that should never be lost sight of is that operative skill is developed at an earlier stage of a surgical career than is the mature judgment which can decide what cases are best treated by operative methods, and that the truly conscientious surgeon will choose the treatment by major operation only in carefully selected cases, either intrinsically or proved by actual trial to be not amenable to medical treatment.

Sir William O. Priestley, who made this subject the theme of his opening address before the Section in Obstetric Medicine and Gynecology of the British Medical Association, reminds us that in this connection we must consider also that "although a just equilibrium will no doubt be attained as to what is right and proper, so far as operations are concerned, by the usual process of evolution, a too reckless attempt at progress not only impairs the reputation of gynecology, but the experience and recognition of faults must be gained at the expense of much suffering to many patients — patients of the gentler sex, on whom no man with a spark of chivalrous feeling would desire to inflict unnecessary pain. They are absolutely at the mercy of the medical man, and submit in blind faith to what he recommends as the best to be done under the circumstances.

We should never by any consideration of either personal credit or the credit of surgery, be led to forget that the welfare of the patient comes always first. For all conduct and decision not founded on the great principle that the profession exists for the good of the public, and not the public for the profession, is fraught with the greatest harm to both.

MEDICAL NOTES.

The Memory of the Late Dr. Dujardin-Beaumetz has recently been honored by the erection of a bust in the garden of the Hôpital Cochin in Paris.

Testimonial to Sir Joseph Lister. — On his retirement from King's College, London, Sir Joseph Lister was, July 31st, presented with a three-quarters length portrait of himself, together with an illuminated and illustrated album containing the names of the subscribers.

Medal Awarded to Dr. Tryon. — Dr. James R. Tryon, Surgeon-General of the United States Navy and Chief of the Naval Bureau of Medicine and Surgery, has been awarded the bronze medal of the Red Cross Society of Venezuela, in recognition of services rendered the wounded at La Guayra during the Venezuelan revolution, three years ago, when Dr. Tryon was surgeon of the United States flagship. *Chicago.*

Honors for Irish Medical Men. — Knighthood has been conferred upon Dr. Thornley Stoker, the President of the Royal College of Surgeons in Ireland, and Dr. Christopher Nixon, the physician in ordinary to the viceregal household.

NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, August 21, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 72, scarlet fever 21, measles 9, typhoid fever 32.

Prevention Cheaper than Cure. — In the *Bulletin of the State Board of Health* of Connecticut, for the month of July, we find the following statement of the unfortunate result of a penny-wise and pound-foolish policy as applied to public hygiene: "An epidemic of scarlet fever in the city of Ansonia has been prevailing since the latter part of May. The small appropriation of $150 per year to the health department of that city did not enable the health officer to use those means which are necessary to control the spread of the disease. It began in the tenement houses in Jersey Street, occupied by foreigners, and has spread from there to various parts of the city. On the recommendation of the State Board, an additional appropriation will be asked for, and more effective means of control undertaken. The suppression of an outbreak of a contagious disease at the beginning, at any cost, is cheaper than to let it spread."

NEW YORK.

Yellow Fever at the New York Quarantine Station.— A case of yellow fever, the first one this season, has developed at quarantine. The patient, Burt E. Hyde, of Connecticut, who arrived on the Ward line steamship *Seneca* from Havana on August 12th, was held, together with the other passengers who did not have certificates of acclimatization, at Hoffmann's Island until five days should have elapsed from the time the ship left Cuba. On the following day it was suspected that he had yellow fever, and he was removed to Swinburne Island, and on August 14th the diagnosis was fully established.

A Death from Glanders.— Joseph Hopkins, a builder of Brooklyn, died on August 9th of glanders and farcy contracted from one of his horses which he had attended himself.

Miscellany.

NOURISHMENT BY SUBCUTANEOUS INJECTION.

At the Congress of Internal Medicine at Munich last April, Leube, of Wurzburg, made a communication on "Nourishment by Subcutaneous Injection," and discussed the general subject of assimilation from the stomach and intestine. For subcutaneous nutrient injections he had employed only fats in his experimental work on this subject. In order to demonstrate that the material thus injected was really absorbed and at times assimilated, he had made use of butter as his nutrient material. Dogs who had been rendered entirely free from fat, when given from 50 to 3,500 grammes of butter by subcutaneous injection showed a noticeable deposit of fat both in the subcutaneous tissues and the internal organs. Chemically this was shown to be in some cases ordinary animal fat, in some still pure butter. The proof that this fat thus artificially supplied was available as nutrient material for consumption in the "animal furnace," was shown by the fact that when the animals' supply of fat was again cut off, this new deposit entirely disappeared.

Correspondence.

THE RIGHTS OF MEMBERS OF THE MASSACHUSETTS MEDICAL SOCIETY.

Monson, Mass., August 16, 1895.

Mr. Editor: — I avail myself of the columns of the Journal to present a matter of interest to the Fellows of the Massachusets Medical Society. The occasion of this communication is a disagreeable incident at the last annual meeting, which I should consider had interest to myself alone, did it not largely concern the rights and privileges of all the members of the Society.

I have been a member of the Massachusetts Medical Society since 1880, and I have always paid my dues with great cheerfulness and regularity. I am also happy to state that, up to a recent date, I have been treated with uniform courtesy by the officials of the Society; but I regret to be obliged to add that this pleasing record was shattered at the last annual meeting. It has not been my habit to regularly attend these annual festivals; but this year a yearning for frozen pudding and a desire to see the governor lured me from my rural haunts.

Judge of my surprise — imagine my righteous indignation when I presented myself at the window of the Treasurer's office with a request for a dinner-ticket, to learn that I should be required to deposit twenty dollars in order to obtain the coveted pasteboard. I was informed that there was no record of the payment of my assessments for the past four years. I assured the Treasurer most emphatically that there was a horrible mistake, that the dues had all been paid, and that I had the receipts at home. But the Treasurer was obdurate and peremptory; his voice was stentorian, and the crowd in my rear impatient. Some one behind me yelled, "Come, hurry up there." I do not know who the gentleman was from whom the cry emanated, but I seize this opportunity to thank him for not administering a kick when he learned that I was a delinquent for four years. Notwithstanding the pressure fore and aft, however, I did not obey the summons to stand and deliver. To my unsophisticated intelligence it savored too strongly of a bunco-game. I concluded that twenty dollars was too much to pay where I owed nothing, even to see the governor. I did not feel, in justice to my family, that I ought to risk my year's surplus in that way. We do not often see twenty dollars in our part of the State, and we never see it again after it has been to Boston.

It is unnecessary to add that I did not partake of the cold snack that I expected was to reward my journey of nearly a hundred miles. I repaired to a hotel, where I astonished the waiters with a display of the appetite that I had been carefully nursing for the annual dinner. In lieu of the speeches that I had hoped to enjoy on that occasion, I could only divert myself with thoughts of James Jackson, Jacob Bigelow, Benjamin Waterhouse, and the discoverer of anesthesia.

And now for the moral. Pardon me, Mr. Editor, if I continue to encroach upon your valuable space. Imagine yourself, for a moment, in the position in which I found myself, and then feel of your pulse. I had been made the victim of official blunders, I had been subjected to an inexcusable and unmitigated outrage — and all owing to an arbitrary assumption of authority on the part of the Treasurer, which he does not possess; but of which more anon.

I returned home, by express train, for my receipts. I found them. Two of them I fished out of the waste-basket, where I had recently consigned them, not knowing, at the time, of the peculiarities of our Treasurer. The receipts were dated as follows: April 20, 1892; April 18, 1893; June 11, 1894; April 15, 1895. If any Fellow of the Massachusetts Medical Society has a better record than that I should like to shake hands with him.

I next transferred my investigations from the waste-basket to the records of the Hampden District. I found that the records were in accordance with my receipts, and that I had due credit there. But it appeared that, owing to an oversight of the District Treasurer, the payment in June, 1894, was not reported to the Treasurer in Boston. A further complication was due to the failure of the District Treasurer to render his account for 1895 before the annual meeting; consequently I had no credit, for the past two years, on the books of the Treasurer of the State Society.

But this does not account for all of the twenty dollars; this only explains just half of my imaginary indebtedness. Hear the rest. Owing to a blunder in the office of the Treasurer of the State Society, which he ascribes to his stenographer, the ten dollars, for which I had no credit on his books, was magnified to twenty. And so, owing to the errors of two of the officials of the Society, I was robbed of my rights, humiliated and insulted. What happened to me might under similar circumstances happen to any other Fellow of the Society; and for that reason I wish to enter an energetic and formal protest.

Of course, the natural supposition is that the Treasurer had authority for doing as he did; but had he? If so, I should be pleased to learn where he got it. There is no rule, regulation or by-law of the Massachusetts Medical Society authorizing its Treasurer to withhold dinner-tickets at his discretion. I am assured by a legal authority that every member in good and regular standing is entitled to a dinner-ticket, whether he has paid his assessment or not, in the absence of any express rule of the Society to the contrary. The supposition that the Treasurer has power to withhold tickets from those who cannot produce evidence on the spot that they have paid all their assessments is erroneous. The fiction has only been tolerated by the good nature of the Society. No one can deny that it has subserved a useful purpose, but my personal history shows that it can work the gravest injustice. The annual meeting is not the place to rectify mistakes; the press of business there is too great. There is no time for convincing argument when one is surrounded by a waiting crowd of Fellows, eager for the banquet-hall, and impatient, as hungry animals always are. In any case of doubt the ticket should be handed over, and the account adjusted afterwards; as frequently occurred before the present Treasurer assumed his office.

The Massachusetts Medical Society is composed, for the most part, of honorable and responsible gentlemen, and a "public-be-damned" policy is decidedly out of place in the conduct of its affairs. Let all the Fellows of the Society bear in mind that they have rights. Let them remember that it is a duty which they owe to others as well as themselves to protest when their rights are infringed upon. And let it also be remembered that the Society is not under military rule; that no officer is a dictator, but that we are all peers and brethren.

Hereafter, when I attend the annual meetings, I shall carry a shot-gun, and bring my dinner in a tin pail.

Yours very truly, F. W. Ellis, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, August 10, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping cough.	Diphtheria and croup.
New York	1,956,000	897	459	28.27	11.11	18.59	2 53	3.96
Chicago	1,600,000	—	—	—	—	—	—	—
Philadelphia	1,139,457	477	224	22.05	7.98	15.75	.18	3.78
Brooklyn	1,043,000	500	280	31.60	7.00	24.20	2.20	3.60
St. Louis	540,800	—	—	—	—	—	—	—
Boston	501,107	300	159	31.02	6.93	27.42	.66	3.63
Baltimore	500,000	—	—	—	—	—	—	—
Cincinnati	325,000	104	33	13.44	15.36	86.41	.96	.96
Cleveland	325,000	120	58	24.07	8.30	20.75	—	2.45
Washington	285,000	140	61	29.82	8.52	22.72	.71	1.42
Pittsburg	272,000	—	—	—	—	—	—	—
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	27	9	25.90	14.80	18.50	—	—
Charleston	65,165	38	13	15.78	13.15	13.15	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	100,410	33	18	36.36	6.06	33.33	—	—
Fall River	92,233	68	41	50.00	5.88	44.10	—	1.47
Lowell	90,613	44	32	47.67	6.81	45.40	—	—
Cambridge	79,607	35	20	20.00	11.40	14.28	—	5.70
Lynn	65,123	31	16	16.15	6.46	6.46	—	3.23
Springfield	50,284	11	4	45.45	9.09	45.45	—	—
Lawrence	49,900	—	—	—	—	—	—	—
New Bedford	47,741	29	17	37.95	3.45	31.05	—	—
Holyoke	43,348	—	—	—	—	—	—	—
Brockton	33,939	8	6	12.50	12.50	—	12.50	—
Salem	33,155	—	—	—	—	—	—	—
Haverhill	32,925	—	—	—	—	—	—	—
Malden	30,209	15	5	40.00	6.66	40.00	—	—
Chelsea	29,806	22	14	41.85	9.10	9.10	—	4.55
Fitchburg	29,383	11	6	45.45	9.09	36.36	—	—
Newton	28,837	10	4	20.00	10.00	10.00	—	10.00
Gloucester	27,293	—	—	—	—	—	—	—
Taunton	26,954	5	3	20.00	—	—	—	—
Waltham	22,058	5	3	20.00	60.00	20.00	—	—
Quincy	19,642	—	—	—	—	—	—	—
Pittsfield	18,802	3	2	66.66	—	66.66	—	—
Everett	16,585	9	6	33.33	—	11.11	—	11.11
Northampton	16,331	8	3	25.00	12.50	12.50	—	—
Newburyport	14,073	8	3	37.50	—	37.50	—	—
Amesbury	10,920	2	2	—	—	—	—	—

Deaths reported 3,084; under five years of age 1,558; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 879, consumption 276, acute lung diseases 159, diarrheal diseases 656, diphtheria and croup 99, whooping-cough 44, typhoid fever 36, measles 20, cerebro-spinal meningitis 14, scarlet fever 7, erysipelas 2. malarial fever 1.

From typhoid fever Boston 6, New York and Brooklyn 5 each, Washington 4. Philadelphia and Fall River 3 each, Nashville 2, Cincinnati, Cleveland, Charleston, Worcester, New Bedford, Brockton, Fitchburg and Everett 1 each. From measles New York 15, Brooklyn 3, Cincinnati 2. From cerebro spinal meningitis Chelsea 4, New York 3, Washington 2, Fall River, Lowell, Lynn, Taunton and Clinton 1 each. From scarlet fever New York 3, Boston, Washington, Lynn and New Bedford 1 each. From erysipelas New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending August 3d, the death-rate was 20.7. Deaths reported 4,207; diarrhea 854, measles 115, diphtheria 76, whooping-cough 53, scarlet fever 47, small-pox (Oldham 2, London 1) 3.

The death-rates ranged from 10.0 in Halifax to 30.0 in Liverpool; Birmingham 19.9, Bradford 16.4, Croydon 16.9, Gateshead 16.3, Leeds 20.3, Leicester 21.0. London 21.4, Manchester 23.6. Newcastle-on-Tyne 18.6, Norwich 26.8, Portsmouth 15.5, Sheffield 21.6, Sunderland 15.9.

METEOROLOGICAL RECORD,

For the week ending August 10th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S .. 4	29.90	72	82	63	86	71	78	S.	S.W.	6	13	O.	F.	
M .. 5	29.90	76	86	67	75	53	64	W.	W.	8	8	C.	C.	
T .. 6	30.00	78	89	67	64	64	64	S.W.	S.	4	9	F.	C.	
W .. 7	29.86	73	80	66	88	88	88	S.E.	S.W.	6	11	O.	C.	1.05
T .. 8	29.94	76	84	68	59	53	56	W.	W.	12	9	C.	O.	
F .. 9	29.99	74	84	64	54	55	54	W.	W.	11	9	F.	O.	
S .. 10	29.90	77	86	68	48	44	46	N.W.	N.	10	5	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 10, 1895, TO AUGUST 16, 1895.

The leave of absence granted **Captain Junius L. Powell**, assistant surgeon, U. S. A., is extended one month.

The extension of leave of absence on account of sickness granted **Major Clarence Ewen**, surgeon, is further extended two months on account of sickness.

The leave of absence for seven days granted to **Captain R. J. Gibson**, assistant surgeon, is extended twenty-three days.

Captain Louis S. Tesson, assistant surgeon, is relieved from duty as attending surgeon at Headquarters, Department of the Missouri, and examiner of recruits at Chicago, Ill., and ordered to Fort Ethan Allen, Vermont, for duty, relieving **Captain Aaron H. Appel**, assistant surgeon.

Captain Appel, on being thus relieved, will report for duty as attending surgeon and examiner of recruits, Chicago, Ill.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 17, 1895.

M. S. **Guest**, assistant surgeon, to the "Minnesota." August 14, 1895.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING AUGUST 15, 1895.

Wasdin, Eugene, passed assistant surgeon. Granted leave of absence for ten days. August 1, 1895.

Williams. L. L., passed assistant surgeon. To proceed to South Atlantic Quarantine Station for temporary duty on being relieved by Assistant Surgeon E. **Prochazka**. August 6, 1895.

McIntosh, W. P., passed assistant surgeon. Granted leave of absence for thirty days from September 1, 1895. August 5, 1895.

Magruder, G. M., passed assistant surgeon. To assume command of small-pox camp, Eagle Pass, Texas. August 10, 1895.

Geddings, H. D., passed assistant surgeon. Granted leave of absence for thirty days on being relieved by Passed Assistant Surgeon L. L. **Williams**.

Brown, B. W., passed assistant surgeon. To proceed to New London, Conn., as inspector. August 15, 1895.

Rosenau, M. J., passed assistant surgeon. To proceed to Eagle Pass, Texas, for temporary duty. August 4, 1895.

Nydegger, Jas. A., assistant surgeon. To assume charge of Detention Camp, Waynesville, Ga., in addition to other duties. August 14, 1895.

Prochazka, E., assistant surgeon. To proceed to Charleston, S. C., for temporary duty. August 6, 1895.

AMERICAN DERMATOLOGICAL ASSOCIATION.

The nineteenth annual meeting will be held at the Windsor Hotel, Montreal, Canada, September 17, 18 and 19, 1895.

First Day.

Address by the President, Dr. S. Sherwell. Angiokeratoma of the Scrotum, Raynaud's Disease of the Ears, Report of Cases, Dr. J. A. Fordyce. Two Cases of Hydroa Vacciniforme, Dr. J. E. Graham. Two Cases of Bromide Eruption, Dr. G. T. Jackson. The Value and Limits of Usefulness of Electrolysis in Dermatology, a General Discussion. Dermatological Notes, Dr. W. A. Hardaway. The Epitrichial Layer of the Epidermis and its Relationship to Ichthyosis Congenita, Dr. J. T. Bowen.

Second Day.

Remarkable Drug Eruption, Dr. F. J. Shepherd. A Hitherto Undescribed Sequel of Non-Parasitic Sycosis, Dr. J. A. Cantrell and Dr. J. F. Schamberg. The Infected Scratch and its Relations to Impetigo and Ecthyma, Dr. H. G. Klotz. A Contribution to the Study of Mycetona, Dr. J. N. Hyde. Unusual Papulo-Pustular and Fungating Bromide of Potash Eruption in a Baby (illustrated), Dr. G. T. Elliot. An Etiological Puzzle, Dr. J. C. White. Studies on Some Dermatological Subjects, Dr. A. R. Robinson.

Third Day.

A Unique Case of Agminate Folliculitis of Parasitic Origin, Dr. M. B Hartzell. Note on Antiparasitic Treatment of Eczema, Dr. J. Zeisler. The Treatment of Erysipelas based upon a Second Series of Fifty Cases, Dr. C. W. Allen. Notes on Drug Eruptions, Dr. J. A. Fordyce. A Further Study of Alopecia Praematura and its Most Frequent Cause, Dr. G. T. Elliot. The Prevalence of Germ Dermatoses, Dr. J. C. White. Symbiosis of Cutaneous Eruptions, Dr. J. Zeisler. Sleep in its Relation to Diseases of the Skin, Dr. L. D. Bulkley. Exhibition of Photographs of Unusual Cases, Dr. H. W. Stelwagon. A paper (title to be announced), Dr. S. Lustgarten. Urticaria Pigmentosa (case twenty years under observation), Dr. P. A. Morrow. Note on the Elastic Circular Bandage, Dr. G. H. Fox.

C. W. Allen, M.D., *Secretary and Treasurer*,
640 Madison Avenue, New York.

SOCIETY NOTICES.

Mississippi Valley Medical Association.— The twenty-first annual meeting will be held at Detroit, Mich., September 3, 4, 5 and 6, 1895.

The Address on Medicine will be delivered by William Pepper, of Philadelphia, and the Address on Surgery by Theodore A. McGraw, Detroit, Mich.

The programme includes numerous papers on subjects in Medicine, Surgery, Gynecology, Genito-Urinary Diseases, and Diseases of the Eye and Ear.

The railroad rates for the meeting will be one and one-third fares on the certificate plan. In purchasing ticket to Detroit full fare will be paid. On request the local ticket-agent will furnish purchaser with certificate, which will be handed to the Secretary at Detroit. This certificate when signed and viséd by the agent of the Central Traffic Association, will entitle holder to return ticket at one-third regular fare.

Frederick C. Woodburn, *Secretary*.

BOOKS AND PAMPHLETS RECEIVED.

Cross Medical College, Denver, Col., Circular of Information and Register of Students, Session 1895–96. Reprint. 1895.

Cirrhosis of the Liver in Childhood. By William A. Edwards, M.D. With Microscopic Report. By William M. Gray, M.D. Reprint. 1895.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum........ 2
Adeps Lanae Co........"N. W. K." 24
Albany Medical College........ 18
Anheuser-Busch Brewing Association........ 23
Antikamnia Chemical Company...Antikamnia 30
Apollinaris Co........ 14
Baker, L. W., M.D........Riverview 19
Baker, Dr. W. H........Card 19
Bartlett, Dr. B. W........Card 19
Battle & Co........Bromidia 20
Bellevue Hosp. Med. Col..... Sessions of '94-95 16
B. H. R. Distilling Co........ 29
Boehringer & Soehne........Ferratin 22
Bowdoin College........Medical Department 16
Bowker, Dr. E. M........Vaccine Virus 12
Boylston Medical Prize Questions........ 2
Breitenbach Co., M. J........Pepto-Mangan 4
Castle, W. & Co........Steam Sterilizer 4
Channing, Dr. Walter........ 19
Chauncy Hall School........ 31
Cocke, Dr. James R........ 19
Codman & Shurtleff.....Surgical Instruments 3
Coll. of Physicians and Surgeons, Boston... 16
Coll. Physicians and Surgeons, Baltimore, 16
Columbian University........ 16
Crittenton, C. N.....Liquid Beef Tonic, etc. 5, 6, 13
Cutter, Dr. W. P........ 19
Dartmouth College, N. H....Med. Department 16
Douglass, Dr. DeF........Artificial Limbs 12
Farwell & Rhines........Dyspepsia Flour 2
Feeble-Minded Youth, Inst. for..Barre, Mass. 13
Fisk & Arnold........Artificial Limbs 12
Flood, Dr. Everett........ 19
For Sale........ 2
Fougera, E. & Co........Imp'g Pharmacists 8, 9, 27
Gear, J. Frank........Surgical Instruments 21
Goldthwaite, Dr. S. V........ 19
Gould's Medical Dictionary........ 24
Graham, Dr. Douglas......Treatise on Massage 28
Greene, Dr. E. M........Examinations of Sputa 19
Harvard Baby Food Co........ 21
Harvard University........Dental Department 16
Harvard University........Medical Department 32
Jefferson Medical College........ 17
Johnson & Johnson........Kola 26
Kingsbury, Dr. A. D........Card 19
Lambert Pharmacal Co........Listerine 26
Leedom, Charles........Nuclein Solution 5
Lehn & Fink........Mfg. Chemists 11
Lilly, Eli & Co........Manfg. Chemists 13
Lloyd, Andrew J. & Co. .....Manufg. Opticians 2
Londonderry Lithia Water........ 7
Long Island College Hospital........ 16
Mackie, Dr. L. V. G........ Sanitarium 19
Marks, A. A........Artificial Limbs 23
Martin, Dr. F. C........Vaccine Virus 2
McElroy, P. J........Glass Syringes 12
Medical Practices, etc........ 2
Medico-Chirurgical College........ 16
Merrell, The Wm. S., Chemical Co........ 14
Norton, Dr. Eben C........Card 19
N. Y. Polyclinic and Hospital........ 16
N. Y. Post-Graduate School and Hospital.. 17
Oakland Chemical Co........Hydrogen Dioxide 3
Pabst Brewing Co........ 5
Patch, E. L. Co........Lithia Tablets 31
Peake & Buzzell........Surgeons' Supplies 24
Phillips Chemical Co., The Charles H....... 1
Pinaud, Ed........Sels Romains 25
Planten, H., & Son........Capsules 12
Purdue Frederick Co., The........ 5
Ring, Dr. Allan Mott........Nervous Diseases 19
Russell, Dr. F. W........Card 19
Schulze-Berge & Koechl......Migranin, etc. 12, 31
Stedman, Dr. Henry R........Card 19
Strong, Dr. S. E........Sanitarium 18
Thayer, Henry & Co........ 20
Theodore Metcalf Co........Coca 10
Tufts College........ 17
Twitchell, Dr. George B........Card 19
Tyree, J. S........Antiseptic Powder 21
University of Maryland........ 16
Walker Pharmacal Co........Phytoline 6
Walnut Lodge Hospital........ 1
Warner, Wm. R., & Co........Pills, etc. 15
Waterman, Dr. Thomas..Animal Vaccine Virus
Weeks & Potter Co........Quinona 30
Wheeler Chem. Works.....Saw Palmetto Comp. 25
Wheeler, Dr. T. B........Phosphates 1
White, Dr. Walter H........Card 19
Willard, Dr. A. J........Card 19
Woman's Hospital, Lowell........ 19
Woman's Medical College, Baltimore........ 16
Woman's Med. Coll..of the New York Infirmary 16
Woodward, L. F........Stammering 19
Wool Oil Refining Co........Wool Oil 4
Yale University........Medical Department 16

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PAGE

LECTURE.

ritis as a Cause of Miscarriage. *By harles Greene Cumston, B.M.S., M.D.*, Inructor in Clinical Gynecology, Faculty of edicine, Tufts College; Member of the Soété Française d'Electrothérapie; etc. Lecte I. 201

ORIGINAL ARTICLE.

Treatment of Typhoid Fever by Instinal Asepsis. *By A. L. Benedict, A.M., .D.*, Lecturer on Digestive Diseases, Dental epartment, University of Buffalo 204

CLINICAL DEPARTMENT.

ort of the First Cases of Celiotomy the Boston Baptist Hospital. *By orge W. Kaan, M.D.*, Surgeon to Out-Pants at the Free Hospital for Women, Gynelogist of the Boston Baptist Hospital, etc. 207

MEDICAL PROGRESS.

ort on Thoracic Diseases. *By George G. ars, M.D.* 207

he Consumption Scare.—Mixed Infection in hthisis. — Auricular Myocarditis. — Cardiac herapeutics. — Post-Diphtheritic Cardiac aralysis.

REPORTS OF SOCIETIES.

ican Climatological Association. elfth Annual Meeting, Hot Springs, ., June 13 and 14, 1895 210

ecent Measures for the Prevention and Treatment of Tuberculosis.—A Study of the Causes of Subclavian Murmurs.—Report of the Committee on Health Resorts in the United States.—The Clinical Results of the Use of Tuberculin in Pulmonary Consumption.—A Case of Traumatic Cardiac Neurosis. Sunshine Statistics.—Mean Atmospheric Temperatures.—Some Observations which Appear to Establish the Aerial Transportation of Malarial Germs.—The Geographical Distribution of the Mineral Springs of the United States.—The Influence of Heredity upon the Progress of Phthisis.—Etiology and Treatment of Certain Kinds of Cough.—A Case of Simple Chronic Pleural Effusion.—Two Factors in the Production of Disease in New York City.

New Hampshire Medical Society. One Hundred and Fourth Annual Meeting, at Concord, N. H. 214

The Germ considered as a Prime Factor in the Production and Treatment of Disease.—Congenital Imbecility.—Report on Surgery.—On Electricity in the Hands of the General Practitioner.—Cancer.—Diarrhea.—Some of the Uses of Strophanthus.—On Bacteriological Diagnosis of Diphtheria.—Serum Treatment of Diphtheria.—Modern Methods of Treating Diseases of the Nose and Throat.—Physical Basis of Crime.—Conservatism in Medicine and Surgery.—President's Annual Address.—The Anniversary Banquet.

EDITORIALS.

The Treatment of Diabetes 218

The Military Effectiveness of the Modern Small-Bore Projectile 219

Medical Notes 220

The Cholera Situation in Russia and China.—New Mexico Adopts the Advanced Standard.—The Result of a Libel Suit in Australia.—The First Chinese Woman Graduate.—Persistence Rewarded.

New England.

Acute Infectious Diseases in Boston.—The Ambulance Service at the Knights-Templar Parade.—The New Department of the Boston City Hospital.—Opening of the Boston City Hospital's Department for Contagious Disease.

New York.

A Medical Martyr of the Last Century.

CORRESPONDENCE.

Subscriptions to the Index Medicus. *J. S. Billings, M.D.*, Washington, D. C. 223

An Important Early Sign of Tabes. *Jas. J. Putnam, M.D.*, Boston, Mass. 223

The Utah Board of Medical Examiners Revoke a License for Unprofessional and Dishonorable Conduct. *P.*, Salt Lake City, Utah 223

MISCELLANY.

Faith-Healing or Suicide 222

Meteorological Record, August 17, 1895 224

Record of Mortality, August 17, 1895 224

Navy Service 224

Appointment 224

Recent Death 224

Books and Pamphlets Received 224

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PAGE 24.

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Lecture.

METRITIS AS A CAUSE OF MISCARRIAGE.[1]

BY CHARLES GREENE CUMSTON, B.M.S., M.D.,
Instructor in Clinical Gynecology, Faculty of Medicine, Tufts College; Member of the Société Française d'Electrothérapie; etc.

LECTURE I.

GENTLEMEN: — You have seen at my clinics a number of cases of metritis in all its various forms, and you have noticed how many of these patients have had miscarriages. It is for this reason that I would like to devote a few lectures to this important subject, particularly as it is just this class of cases the general practitioner is called upon to treat; and a knowledge of this subject will certainly be of value to you in your practice hereafter.

It is necessary, in order to have a good idea of what is to follow, that I should put before you a few of the generalities of the pathology of abortion.

Abortion is the expulsion of the product of conception before the fetus is viable, in other words, before the end of the sixth month of gestation.

The important writings of Garimond and Jacquemier demonstrated the real etiology, and the rapid progress of medical science has little by little excluded the so-called spontaneous abortions; and I think it is safe to say that there is not such a thing as a spontaneous or idiopathic miscarriage. As the great Barnes says, an abortion indicates that there is a disease, or that the organism is overworked. A healthy woman, well built, and who has conceived from a healthy man, aborts with great difficulty.

Theoretically and practically, the causes of abortion are *predisposing* and *determining*. The immediate or effectual cause in all cases is the contraction of the uterus, which may be produced by external or internal irritation.

To the first order belong traumatism, heat, cold, electricity, nervous emotions, etc. You should put little faith in what a woman or her friends say regarding a slight fall, a slip, jar of a carriage, a disagreeable smell or anger, as a cause of abortion. Medical literature is full of cases in which pregnant women have received bad shakings-up, falls from quite a distance, wounds, and even severe operations (such as laparotomy), without interrupting the progress of pregnancy. Cazeaux mentions the case of a woman who threw herself from a third-story window, fractured her arm, and had a normal labor at term.

In the ordinary conditions of health, pregnancy is well protected against the most various accidental influences, and the cause of the habit of easy abortion must be looked for elsewhere. As Barnes says, a healthy uterus is not at the mercy of an emotional or diastaltic accident; but it is in no way doubtful, I think, that very violent external irritations may produce an abortion, especially in nervous subjects.

Physical irritations almost always act by a partial separation of the placenta from the uterine wall, by the rupture of some vessels, or simply by producing a congestion of the uterus, which may subside or terminate in a short time by a utero-placental hemorrhage. If the extravasation is of sufficient extent to suddenly destroy functionally a considerable portion of the placenta, the fetus dies at once, and very probably the commotion that is received by the uterus produces contractions which detach and expel the ovum.

It sometimes happens, however, that even when there is a considerable extravasation, the embryo does not die; the ovum is detached, and is then expelled with a living embryo.

There are cases, gentlemen, in which a jar will directly produce an excito-motor action of the uterus, or in others death to the fetus. External violence may act directly over the region occupied by the uterus, and wound the fetus. Severe or sudden mental shocks act by means of the nervous system of the woman by directly producing uterine contractions, with death to the embryo, or by causing a congestion of the uterus and utero-placental hemorrhage.

Although uterine contractions may be set up by external irritation some distance from the genital organs, the most important and dangerous are certainly the *internal* irritations which act on the internal aspect of the uterus. You all are aware that foreign bodies introduced into the uterine cavity will cause abortion. As in the above-mentioned irritations, the uterus contracts by a reflex action; but the starting-point of this reflex is the uterus itself, and not in other parts of the organism.

To this category of internal irritation belongs the exit of blood from the vessels, and even the ovum, in certain cases. The hemorrhages which occur at the surface of the ovum come from the chorion or the placenta, and may provoke a premature labor, not only resulting in the death of the fetus, but also by irritating the internal aspect of the uterus, starting up contractions.

According to Garimond, if the collection of blood is situated between the chorion and the uterus, the muscular fibres show their irritation by contracting, the hemorrhage acting like a foreign body; but it is tolerated when it accumulates in the interior of the ovum. If the ovum is detached, with or without a collection of blood, it acts in the same manner, because the friction that it produces on the interior of the uterus excites the nerves of the organ, thus producing the labor pains.

Now, as to the cause of the death of the fetus, the question is not fully settled. The majority of the French and German authorities admit that the fetus, when once dead, acts like a foreign body, and after a variable time starts up uterine contractions which expel the ovum. But there are some of the present German obstetricians who are opposed to this theory, and give the following explanation in its stead. The dead fetus does not play the part of a foreign body; its action on the contractions is of an entirely different nature. With the arrest of development of the ovum, the stimulant of the growth and proliferation of the muscular fibres of the uterus ceases. Now, if the death of the embryo takes place slowly, the same process will occur in the uterine tissue; there is consequently arrest of the reflex growth of the muscular tissue of the uterus, or, as may be admitted, the usual relaxation of the organ is no longer in a favorable condition, while the muscular fibre having stopped growing must in time contract. Thus, according to this theory, it is not the foreign body but the disappearance of the cause that brings about labor, namely, distention of the uterus and absence of contractions.

Although this theory is ingenious and is in accord to a certain degree with the hypotheses regarding muscular contraction, Rouget's theory is certainly of doubtful value, and is as follows: anything which prevents the work of nutrition of a muscle causes the tendency of lengthening of the fibres to disappear, while the elasticity remains alone in play, and contraction is the result. As is pointed out by Zielinski, it would appear to me that in this theory there is a confusion of *contractility* and *retractibility* which are two very different properties of the uterine muscle.

---

[1] Being four Clinical Lectures delivered at the Suffolk Dispensary, Boston.

The most plausible explanation of the action of the dead fetus is probably that given by Barnes: After the death of the fetus (if this is the first act) death of fetal and maternal placenta and the envelopes comes on progressively, the vascular connections between the uterus and placenta are cut off, and the uterus being no longer stimulated to growth, takes on the condition of a non-pregnant organ. There is involution, the circulation of blood becomes less active, the muscular tissue undergoes fatty metamorphosis, and the whole organ decreases in size. At the same time the chorion undergoes an involution of the same nature. The end of this mucous involution is exfoliation or detachment. Once this separation is accomplished the ovum is free in the uterine cavity, and is now only a foreign body. When the uterine retraction, which accompanies involution, has reached a certain point, the dead ovum comes in contact with the retracted uterine walls, and the retraction, which up to this time was only passive and atrophic, is replaced by active muscular contractions, produced by reflex action.

To internal irritations capable of producing miscarriage, I might add distention of the uterus. This may be caused by an abnormally large ovum, as in twins, hydramnios or other similar conditions, which act on the entire internal surface of the uterus by producing over-distention of the muscular fibres of the organ. On the other hand, the ovum may be normal, but the walls of the uterus are limited in development by loss or decrease in their elasticity.

In both conditions, the extreme distention of the uterus is sometimes sufficient to cause premature contractions and thus interrupt the progress of pregnancy. It is probable that in metritis the coexistence of lesions of the endometrium and muscular tissue is constant. According to de Sinéty, Courty and Schroeder, inflammation of the endometrium rapidly invades the parenchyma of the organ, resulting in metritis and parametritis.

No matter what may be the etiological factor, the nature or primary seat, the inflammatory process invades the neighboring tissues by way of the lymphatics, veins, connective-tissue elements — from the endometrium to the parenchyma of the uterus and periuterine tissues. But in most of the cases, you will find the lesions will predominate in some one part of the organ, as the endometrium or uterine parenchyma; consequently pathologists have classified inflammations of the uterus into two groups, endometritis and parenchymatous metritis.

The same division is to be made in the pregnant woman, because the endometrium here plays the all-important part; and as I have already mentioned in another lecture[2] the adhesions between the decidual and the muscular tissue of the uterus become less and less intimate as gestation progresses. Parenchymatous metritis is not so important a factor in the etiology of abortion as is endometritis, its influence being of an entirely different kind.

I shall only speak of the chronic metrites, which are far better understood than the acute types. Inflammation of the endometrium may invade any of the three deciduæ, the decidua vera, reflexa and serotina. In each case, the histological process is the same; it it either an interstitial endometritis, consisting of an infiltration of small embryonic cells, often arranged in rows, according to Veis, as well as a proliferation or alteration of the decidual cells; or else it is a glandular endometritis, which is a hypertrophy and hyperplasia of the uterine glands; and lastly, it may be a mixed endometritis, with or without vascular lesions.

According to the nature of the lesions, the changes in the decidua vera present different anatomical characters.

In *hyperplastic endometritis* the decidua is thickened to even double the normal, and continues to increase as it comes nearer to the fundus. This hypertrophy is often uniform and regular, giving the surface of the mucosa an even and smooth appearance. Interstitial inflammation predominates in this type and may go as far as real sclerosis and even to formation of abnormal adhesions. Hemorrhages occur quite often. Kaschewarowa found muscular fibres in parts of the mucosa nearest to the uterine walls.

In the *tuberous endometritis*, also called *polypoid*, instead of an even hyperplasia as in the preceding type, the decidua presents numerous projections, which may attain a centimetre and a half in height. They are rather irregular, generally pedunculated, and look like polypi. Those which are sessile take on various shapes like folds, nodosities, bands, etc. These inequalities are usually very vascular and are made up, according to Dohm, Spiegleberg and Mars, of large decidual cells. Tarnier and Budin, when writing in 1888, said that in all the cases reported up to that date, pregnancy had not gone beyond the fourth month. The development of the ovum was very much interfered with or else hemorrhage occurred and produced abortion.

Cystic endometritis, as its name indicates, has for pathological changes the development of numerous cysts in the midst of the decidua. These cysts vary in size from that of a pea to a walnut and contain a colloid substance. The surrounding parts of the decidua are in a state of hypertrophy and small hemorrhagic foci are to be found. This cystic degeneration is in some cases so pronounced that it might be mistaken for an hydatidiform mole. Leopold, Winckel and Veit believe that the cysts are produced by the distention of the uterine glands, which are filled by their retained secretions. Maslowsky examined two deciduæ from a woman who had three abortions in one year, all occurring at the end of the second month, and found that in both specimens the decidua was riddled with small cysts which were partially lined on their interior by a glandular epithelium.

The production of *catarrhal endometritis* is due to the inflammation, hypertrophy and over-activity of the uterine glands. When the decidua is irritated and in a condition of hyperemia, these glands, which are now generally regarded as filters and not organs of secretion, filter the excess of liquid which they receive from the neighboring capillaries. There then form between the decidua vera and reflexa what may be termed *hydrorrheic pockets*, with the result that these deciduæ, which are united at the end of the third month of gestation, remain separated. I believe that it is quite safe to say that an endometritis can be the cause of a decidual hydrorrhea; but all writers do not consider it as the only factor in the production of a watery discharge.

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[2] Hemorrhagic Metritis. International Clinics, Fourth Series.

Hemorrhagic endometritis was the subject of a clinic given here some time since, and I shall be brief. Winckel has termed this affection as apoplexy of the decidua, which is in a condition of hypertrophy with dilated vessels, while extravasation of blood is to be found both at the internal and external aspect. Budin has reported a very demonstrative case in which there was a hemorrhage of the decidua some distance from the placenta, while on the decidua, which was hypertrophied, were some vessels, which near the clot were dilated and moniliform, such as are met with in neo-membranes.

Purulent endometritis is a very rare form, only a few cases having been reported. It is simply a purulent infiltration of the decidua and also in some cases the chorion. The starting-point is probably an inflammation of the decidua vera.

Now, gentlemen, it is very infrequent to meet with a case in which *one* of the above-mentioned forms is perfectly typical; generally they are combined, for example, a hyperplastic will be found accompanying a polypoid endometritis and then we have the *mixed* variety.

Inflammation is much less likely to invade the decidua reflexa, because atrophy takes place much earlier in this than in the decidua vera, the regressive metamorphosis beginning after the first month of gestation; and Veit states that he has never seen a characteristic interstitial inflammation of the decidua reflexa. It is only in catarrhal endometritis that it really plays an important part. However, there are some recorded cases in which the decidua reflexa was found thickened, and although very rarely, hemorrhages in its substance were noted, while Dohm has even reported a case of polypoid endometritis.

Now, if you carefully examine the expelled products of a miscarriage and on the external aspect of the chorion you find a quantity of rather friable yellowish tissue, you must be very careful not to at once make a diagnosis of endometritis, because this mass of tissue, which undoubtedly may be the decidua in a state of hypertrophy, may also be simply fibrous clots of a yellow or whitish color and easily recognized by their stratified aspect. Consequently, you should make a microscopical examination, which will remove all doubts.

The important changes of the decidua naturally affect the other membranes of the ovum. The chorion may be very thin and friable, while its villosities may develop irregularly and undergo a fibro-fatty, or even myxomatous, degeneration. The amnios may be only slightly united to the chorion or may even be separated from it by a sanguineous collection. The amniotic liquid becomes opaque, brown and sometimes even bloody. Consequently, you will keep in your minds these secondary lesions of the membranes which show their changes by partial detachment or adhesions. If the inflammatory lesions are only seated in the decidua serotina, you have to do with placental endometritis, which presents the same types as decidual endometritis, so I will not repeat them here.

As to their histology, I shall use the classification of Zinowieff, who has made some remarkable studies on the pathology of the placenta in abortion.

First, we have pathological changes in the placental vessels with troubles in the circulation, among which may be mentioned, as the most important, intraplacental hemorrhages, circumscribed or diffused, and a periarteritis of the placental vessels which produces a diminution in their calibre and a fatty degeneration of the villosities.

Secondly, a proliferation of connective tissue, which forms the so-called diffused or circumscribed interstitial placentitis.

Thirdly, changes in the decidual cells and villosities, which consist in a colloid, fatty, granular, hyalin, or fibro-fatty degeneration, with atrophy and change in shape and size of the villosities.

To this last, belongs the four cases of abortion reported by Colucci. They all took place between the tenth and fifteenth week. The villosities of the fetal placenta presented a hypertrophy of their epithelial membrane and an atrophy of their connective tissues. These changes coincided, according to this writer, with an endometritis. Veit, Winckel and others admit that a placental endometritis is often the cause of white infarction, and always that of a placenta marginata, the latter always being, according to Veit, a characteristic sign of endometritis.

A decidua serotina endometritis may result in a hypertrophy or adhesions of the placenta, these being usually partial, seldom total. Hypertrophy of the placenta is easily recognized by a careful inspection of the specimen. Its increased size and weight, in relation to the size of the fetus and the duration of pregnancy, are also quickly estimated. As to partial or total adhesions which are commonly met with in practice, they play an important part, of which I shall speak later.

Chronic parenchymatous metritis is generally of old standing; the uterine muscle has lost its elasticity; while the predominating histological change is a proliferation of the connective tissue with resulting sclerosis. The muscular fibres, which in the beginning were in a state of hypertrophy, softened and red, atrophy, become hard to the feel, and take on a whitish color. These changes are due to an embryonic proliferation occurring around the vessels. When the uterine parenchyma has been acted upon by an inflammatory process of long duration, it is infrequent if there is not at the same time some remains of a perimetritis with adhesions producing deviations of the organ and traces of salpingitis. The uterine mucosa is *always* more or less diseased.

The question now comes as to how metritis produces abortion and I will try to demonstrate this problem to the best of my power. The uterine mucosa is a soil more or less fertile, in which the ovum may grow and develop, or perish. If it is badly diseased, it is unsuited to hold the impregnated ovum; but if the endometritis is not very severe or generalized, the ovum grafts itself on to it, develops and may go to full term; however, it is more frequent to meet with an interrupted gestation sooner or later in these cases. The consequences are the same for both mother and fetus when an inflammation of the decidua takes place during gestation, and its influence on the evolution of the ovum is always of the worst. Endometritis, and metritis in general, bring about sterility or various complications during gestation, labor or the post partum. The difference depends on the severity, the nature, the condition of the patient and other factors which are sometimes difficult to make out. The miscarriage in these cases is only one of the symptoms of endometritis, but by far the most important and frequent.

It may occur in several ways which I will now consider:

By the death of the fetus. Following the changes in the decidua produced by the endometritis, the villosities of the chorion become diseased, while the underlying structures become so in their turn until the ovum is also in a pathological condition. On account of repeated congestion, friability and rupture of the vessels, the decidua may also become the seat of extravasation of blood which compresses and alters the villosities of the chorion, resulting in the abolition of their functions and reducing the decidua serotina to a condition of uselessness, with death to the fetus and later its expulsion from the uterine cavity.

The second manner of miscarriage is by detachment of the ovum. If a hemorrhage suddenly occurs in the decidua vera or serotina, or if it is considerable in amount, it produces a detachment of the ovum which is followed immediately or in a few days by a miscarriage. Hydrorrhea produced by a catarrhal endometritis acts in the same manner. When the liquid is suddenly expelled in considerable quantity, the sudden decrease in size of the uterus may produce a detachment of the ovum and contractions of the organ.

Hyperplasia of the decidua, especially the serotina, often exercises its bad influence on the fetus by cutting off its nutrition. The connective tissue or a proliferation of embryonic cells around the villosities and the cotyledons which are thus more or less encroached upon, produce a diminution in the calibre of the vessels and a fatty degeneration of the villosities, while the fact that healthy parts of the placenta become more and more reduced in extent, soon acts on the fetus, which finally dies. Now, a sclerous hyperplasia of the decidua or an induration of the placenta may also produce a miscarriage by loss of elasticity of its tissue, which can only follow the growing uterus with difficulty, and there finally comes a time when a partial detachment takes place.

The third manner of miscarrying is by rupture of the membranes. As I have already said, the pathological condition of the decidua may act on all the membranes; and when they are badly nourished, they become friable and break by the least movement. This is enough to show you how premature rupture occurs, with a resulting miscarriage or premature labor. Sometimes an inflamed decidua, by modifying its nutrition, increases the irritability of the uterus to such an extent that the normal development of the ovum is enough to bring on painful contractions which usually expel the ovum. In this case, the miscarriage is not preceded by either detachment of the membranes or death of the fetus. As to endometritis of the cervix, when there is much secretion, the spermatozoa cannot enter the cavity of the uterus on account of the mechanical obstruction produced by the plugs of mucus in the canal. But cervicitis can also cause miscarriage, and Whitehead believes that 73 per cent. of miscarriages are provoked by diseases of the lower segment of the uterus. Barnes believes that although the cervix has no direct relation with the ovum, its connection with the corpus uteri is sufficiently intimate for a severe cervical hyperemia to produce considerable afflux of blood and nervous disorders in the body of the organ. An extravasation of blood, with miscarriage may result.

As I have already remarked, in chronic parenchymatous metritis, after perivascular embryonic proliferation and ultimate sclerosis, the uterine walls lose their natural elasticity and can no longer dilate as the ovum increases in size. In consequence of this rigidity, the organ can only tolerate the ovum up to a certain time; and when the germ has developed to a size which distends the uterine walls to their limit, contractions begin and determine the miscarriage. As parenchymatous metritis is of long duration, miscarriages may occur often and usually at about the same time of gestation on each occasion, because the walls can only be distended just so far Leopold thinks that this metritis is quite sufficient explanation for repeated miscarriage in many cases; and a case is mentioned by Bick of a woman having a chronic metritis, and who aborted twenty-four times, always at the third month of pregnancy.

I have seen many cases of endometritis and metritis, in whom sterility was present, or who could never carry their pregnancies further than the first three or four months. In many of them labor at term was brought about by proper surgical treatment of the diseased uterus.

I have now finished with the pathology of miscarriage, and in the next lecture I shall take up the various forms of metritis and their relations to abortion.

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Original Article.

THE TREATMENT OF TYPHOID FEVER BY INTESTINAL ASEPSIS.[1]

BY A. L. BENEDICT, A.M., M.D.,
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THE writer's first experience in the treatment of typhoid fever dates from the time when the profession was just beginning to realize, with a feeling almost of aggrievement, that antipyretic drugs were not curative. For years, the cry had been "Oh, if we can only find some drug that will bring down the temperature, we need not fear the fever." Antipyrin was hailed with joy as fulfilling this earnest desire; but disappointment followed, for the reduction of temperature, far from removing the essence of the disease, was often bought at a tremendous cost of vital strength. Moreover, every new drug is given in doses sufficient to show a definite physiological action, and in many susceptible patients an almost toxic effect is produced. The history of antipyrin was about as follows: first year, 40-grain doses; second year, 30 down to 20 grains; third and fourth years, 15 grains or a gramme; fifth year, half a gramme, 7 1-2 grains; and, more recently, it has been taught that all antipyretic drugs should be avoided and that bathing is the only justifiable means of reducing temperature.

The present paper is an argument aimed more directly at the cause of typhoid fever, in other words, a plea for treatment along the line of intestinal asepsis. It might as well be admitted at the outset that this treatment has not justified the glowing hopes of its earliest advocates. We can not dress an intestinal ulcer as we can one on the outside of the body, nor can we kill typhoid bacilli, growing in a hotbed of filth, as we can ordinary germs of suppuration which fall into an open wound.

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[1] Read at the annual meeting of the Alumni of the Medical Department, University of Buffalo, April 30, 1895.

Before discussing the value of intestinal antisepsis, let us consider two cases, one illustrating the antipyretic treatment of seven years ago, the other the more modern treatment, directed toward the poison of the disease.

On April 16, 1888, there was admitted to a hospital, a lad of nineteen, this being the ninth or tenth day of the disease. Three days earlier, he had been seen by a physician, who found his temperature 104°, pulse 120. Subsequently, the temperature had ranged between 101° and 103.5°. The bowels moved twice daily. The patient was delirious, and would not take much nourishment. He was put on milk diet, four ounces (125 c. c.) every two hours, with an ounce of whiskey (30 c. c.) at every third feeding. From April 18th to April 21st, the patient was conscious, in spite of high temperature. A twenty-four-hour sample of urine consisted of 40 ounces, about 1,200 c. c., yellowish-red, acid, of a specific gravity of 1.022, containing albumin, and depositing a sediment of squamous epithelium and mucus but no casts. In the morning, the temperature being 103.8°, not reduced by a sponge bath, 15 grains (a gramme) of antipyrin was given at nine o'clock. The noon temperature was 102.6°. Five grains (a third of a gramme) of quinine was given, and, on account of pain in the right iliac region, a quarter of a grain (.015) of morphine. The evening temperature was 105.2°, and again a gramme dose of antipyrin was given.

The following morning, April 22d, the temperature was normal, having dropped or been forced down seven degrees in eight or nine hours. April 24th and 25th, the temperature was reduced by a gramme dose of antipyrin from 105.2° to 97.4°, a depression of almost eight degrees, yet it bounded back to 103.6° during the day. On the next day, the bowels not having moved for three days, an enema of flaxseed tea was administered successfully.

April 26th, about the close of the third week of the disease, the evening temperature was 106.2°, and was again reduced with quinine and antipyrin. The patient was now taking two quarts of milk (about the same number of litres) in twenty-four hours, with half an ounce (15 c. c.) of whiskey every two hours.

May 1st, about the middle of the fourth week of the fever, the whites of five eggs were added to the daily ration. The temperature for a few days had been somewhat lower.

May 3d. The patient was tremulous, and complained greatly of pain. During the night, he passed a lumbricoid worm. On the 4th, at six in the morning, the temperature was 106°. From this time, the patient was delirious, picking at the air and bed-clothes, tremulous and with jerking tendons, pinched face, cold extremities, at intervals making half-articulate complaints of pain.

May 7th, in the middle of the fifth week, a bed-sore developed. The daily ration at this time, was three pints of milk (1,500 c. c.); lime-water and whiskey, of each six ounces (200 c. c.); and six eggs.

May 10th, there was evidence of effusion into the right thoracic cavity. The restlessness, subsultus, and general prostration were more marked. Camphor-water was given in ounce doses (30 c. c.,) every hour till the patient became somewhat quieter. Beef-juice, four ounces (125 c. c.), was given instead of the later feedings of milk, and the whiskey was increased to 10 ounces (300 c. c.). Aspiration was performed in the fifth intercostal space in the axillary line; 39 ounces (nearly 1,200 c. c.) of greenish-yellow sero-pus was withdrawn. Immediate microscopical examination showed red blood-cells, endothelium and bacteria. Aspiration was repeated the next day, and the same amount of fluid was withdrawn but it was now darker and more evidently purulent. An incision was made and the cavity was irrigated with a 1–8,000 solution of mercuric chloride, after which a drainage-tube was inserted. The patient died that same evening.

On autopsy, less than twenty-four hours after death, decomposition was already in active progress. Cicatrices were found in Peyer's patches, the mesenteric nodes were still enlarged, and the middle part of the small intestine was injected. The spleen was enlarged, as it always is in septic conditions of the intestine, and an infarct was found on the right border. The kidneys were congested, but otherwise normal. The liver was normal. The pericardium contained three ounces, nearly 100 c. c., of fluid. The left lung was congested, but non-adherent and crepitant; the right lung was compressed, and covered with pus and fibrin.

The other case, which occurred last fall, is an illustration of the treatment directed toward absorbing the poisons of the disease. A girl of sixteen, felt the first vague symptoms of typhoid on August 26th, while at a picnic. My first visit was on September 1st, at 6 P. M. Her temperature and pulse were each 104, and there were one or two doubtful typhoid spots. Calomel was given in four small hourly doses, to move the bowels, and sponge baths were ordered. From September 2d to September 5th, salol in ten centigramme doses was given every six hours, and half a teaspoonful of charcoal, two hours after feeding, three times a day. From September 5th to September 16th, the salol was given only twice daily. From the 16th to the 21st, iodoform, ten centigrammes in capsule, was given three times a day. The salol was then recommenced and continued for three days, all *anti*septic treatment being then stopped. The charcoal was continued a day longer. From this time, the patient was practically convalescent, though defervescence was not complete till October 1st. There is little to say about the course of the disease. The patient was slightly delirious for the first few nights, and there was, at first, a tendency to high fever. Thereafter, she was simply comfortably sick, showing no marked signs of poisoning and was able to keep her own diet record, something which, as a rule, typhoid patients should not be allowed to do. The urine was examined several times during the disease without ever showing any abnormality. Ehrlich's test was always negative, indicating, I believe, that the poisonous products of the fever had been absorbed by the charcoal. It is likely that this case is to be assigned to the percolation into the soil of fecal matter from a case of typhoid occurring in the same family, two or three years previously. I was informed that no precautions were then taken to disinfect the stools. As the result of an investigation by the Board of Health, after my report of the existence of the case, a sewer was put into the premises and the privy-vault changed to an out-door water-closet.

Here are two cases, about equal in point of maturity of the patients, both first seen at the fourth or fifth day of the disease, and both having about the same temperature range at the beginning. The former had the benefit of hospital treatment, the latter simply ordinary home nursing. The girl, also, had the disadvantage of a dark room and of the unsanitary conditions referred to. Both took nourishment well, the young man considerably more than the girl. The former was freely stimulated; the latter had a few doses of digitalis and of whiskey, not given except when a little chilliness in the morning called for some spur to the vital forces. The former was treated on the antipyretic plan; the latter with charcoal, salol, and a few doses of iodoform. The former died of septicemia; the latter recovered after a rather short and uneventful illness.

Manifestly, one such contrast is not sufficient to establish the superiority of one mode of treatment over another; hence the cases are reported rather as texts than as arguments. Typhoid is a general infectious fever with a local lesion in the ileum. The lesion itself, with proper diet, is rarely the cause of death. Fatal hemorrhage is quite rare, and intestinal perforation occurs in only a ninth of the fatal cases. Death from septic complications, though not uncommon, is almost always preceded by systemic intoxication. In other words, it is not the typhoid bacillus itself that we need to fear, but the poisons elaborated by it. The same statement might hold good, in a theoretical sense, of many other diseases; but the introduction of typhoid germs into animals does not set up the disease, nor is the fever especially dangerous to human beings so long as signs of the constitutional effect of its toxines are absent. Of course, such a statement must not be taken without some qualification; we must presuppose careful nursing and attention to diet, and must admit the occurrence of exceptions to all rules. One of the most conspicuous features of the toxemia of typhoid is the temperature. At this is aimed the antipyretic treatment; but its advocates are illogical in that they mistake a part for the whole and a symptom for a disease. In particular, the fact is overlooked that one patient with a high temperature throughout the disease may be perfectly rational and comfortable and make a good recovery, whereas another patient with an average temperature range of a degree and a half lower, shows every other symptom of typhoid poisoning and dies.

Typhoid does not attack the lower animals; many human beings are immune, at least, at certain times. Many others who have well-marked typhoid fever, show no tendency toward serious poisoning. The practical lesson is that, although we may not be able to kill the bacilli in the bowel nor to abort the fever, we can rob the disease of its terrors and shorten its course, if we can neutralize the chemical secretion of the germs. I have watched a series of cases treated with carbolic acid and iodine, without any apparent result. Indeed, such soluble antiseptics cannot be expected to reach the seat of the disease in appreciable quantity. Salol, which is practically insoluble till the intestine is reached, and iodoform, which is very slowly absorbable, may be expected to act more vigorously; but the large surface to be covered, and the intervention of fecal matter and mucus, so interfere with their antiseptic effect that they have failed in practice. Irrigation of the colon, recommended by Dr. F. W. Bartlett, of Buffalo, ought to have the happiest results in cases of typhoid colitis, which are not very common; but the removal and disinfection of the contents of the lower bowel are also of service in ordinary iliac typhoid.

In the present paper, I wish to call attention to a treatment which is not directly antiseptic, but which acts on the same general principle. It consists in the administration of comparatively large doses of charcoal, this being the essential element of Bouchard's method of combating typhoid. Charcoal is absolutely non-toxic, and may be given in any amount short of the quantity sufficient to cause intestinal obstruction. I usually give half a teaspoonful, three times daily. Its action is to fix many organic substances, including the poisonous products of fermentation and bacterial growth. In the second case of typhoid cited, it apparently did all that could be expected. The stools were never offensive; the urine at no time showed signs of renal irritation nor of that particular poison which is most commonly found in typhoid fever and which gives rise to the so-called Ehrlich reaction. There was none of the characteristic tympanites which marks intestinal putrefaction, nor were there grave nervous symptoms. The duration of the illness was not especially shortened, but I believe that the patient had two separate typhoid lesions overlapping in time. After a few days of high fever, the temperature declined almost to normal on the fifteenth day of treatment, or the middle of the third week of the disease. Then it repeated the usual temperature curve of the second week of typhoid, and again declined after two weeks, this time permanently.

Any discussion of typhoid fever at the present time which overlooks the treatment by plunge baths is simply evading a live issue. I will frankly admit that I have not the courage to put this treatment into practice.[2] The statistics of this treatment are excellent; the authority supporting it is unquestionable; yet I cannot bring myself to do for a dangerously sick man what a well one could scarcely endure. Prolonged immersion in water of any endurable temperature is depressing, as any one who swims, or who has observed swimmers, knows. On the other hand, if the bath is cool enough to reduce temperature without a considerable time of immersion, it must be cold enough to cause more or less of a shock and to drive the blood inward where it will embarrass the kidneys, liver and other vital organs, while, at the same time, the activity of the skin is diminished. In other words, the treatment directed toward the high temperature is either depressing or it tends to lock up in the body the very poisons to which the temperature is due. I have seen the temperature lowered nine degrees in a few hours following immersion and have seen, at one time, three convalescent patients with subnormal temperature, blue lips and chattering teeth after a merely tepid bath. Hot sponging or a steam bath would be indicated so far as the toxemia is concerned; and, granting that the temperature must be brought down at all hazards and that ordinary cool sponging fails, I should prefer antipyretic drugs to the plunge bath.

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[2] This remark was understood by several as referring to the well-known difficulty of overcoming the scruples of the friends and relatives of a patient. Many, indeed, who admit the efficacy and safety of the immersion treatment, say that they cannot use it in private practice though they approve of it for hospital patients. My fears are entirely for the patient, not for any effect on the popularity of the physician who uses the plunge baths.

Clinical Department.

REPORT OF THE FIRST CASES OF CELIOTOMY AT THE BOSTON BAPTIST HOSPITAL.

BY GEORGE W. KAAN, M.D.,
Surgeon to Out-Patients at the Free Hospital for Women, Gynecologist of the Boston Baptist Hospital, etc.

The Boston Baptist Hospital is at present in Longwood, in what was a private house, and its conveniences, therefore, are not those of older and better-fitted hospitals. The operating-room has been made as aseptic as thorough washing of walls and floor can make an ordinary room; and the fact of there having never occurred a case of sepsis in all the variety of cases operated upon here, is evidence of the good care of the head-nurse in charge. The towels, sheets, gauze sponges and dressings were sterilized in a steam-sterilizer. The instruments were boiled for ten minutes in water with soda. Boiled filtered water was used for washing the sponges and for flushing the abdominal cavity when needed.

Case I. Mrs. S. W., age thirty-seven. Some two years ago the left ovary was removed by the late Dr. Strong. She felt better for some time; but a renewal of the pain on the left side of the pelvis, and a beginning pain on the right, caused her to enter St. Elizabeth's Hospital, where the uterus was curetted, but with no improvement of symptoms.

Ether examination at the Baptist Hospital showed the right ovary enlarged, and bound down by adhesions, and also some thickening on the left of the uterus. Curetting was done at this time, but without any good result.

Early in November the abdomen was opened, the incision being through the cicatrix of the first celiotomy. The right ovary, enlarged and cystic, was removed, the pedicle being tied with silk. The stump of the left ovary was found bound by some adhesions, which were broken. The incision was closed by silkworm-gut sutures, care being necessary not to include parts of the omentum which were adherent in the line of the first celiotomy incision. The bowels were moved on the third day, and the patient made a good recovery. She is now doing general housework, and has been wholly relieved from the pain she suffered.

Case II. Miss A. B., age twenty-three. This was a cyst of the right ovary, about the size of a lemon; and the case is interesting mainly because of the very rapid advance made in weight and strength, even before leaving the hospital.

Case III. Mrs. M. C., age sixty-two. She complained of pressure in the abdomen, and difficulty in micturition and defecation; some soreness, especially on the left side. Examination showed an irregular growth, the size of a cocoanut, apparently attached to uterus and ovaries, and somewhat more movable on left side than on right. Diagnosis of malignant disease was made, and recommendation of abdominal section for removal of uterus. Previous to seeing me, she had been tapped in July, with removal of six quarts of fluid, and again in September, when about eight quarts were removed; for some months she had been having electricity, but with no result. Upon opening the abdomen, the smooth walls of a cyst appeared, filling the cavity of the pelvis. The cyst was drawn out with difficulty and with slight laceration of its walls, allowing the escape of a brown fluid, which was caught in towels. It proved a papillomatous cyst of the right ovary, extending across the uterus and into the left side, where small accessory cysts had given its irregular feeling through the vagina. The left ovary could not be found, and it had apparently atrophied. The silkworm-gut used to close the incision had been placed in 1 to 1,000 corrosive, which was too strong a solution, particularly in so old and debilitated a patient; for though the incision healed by first intention, there were small abscesses in most of the stitch-holes, which, however, closed rapidly by the application of hydrogen peroxide through a perforated probe. Otherwise, recovery was uneventful.

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Medical Progress.

REPORT ON THORACIC DISEASES.

BY GEORGE G. SEARS, M.D.

THE CONSUMPTION SCARE.[1]

In view of the agitation of the public mind at the present time on the subject of tubercular infection, which the utterances and writings of not a few medical men have unfortunately tended to foster, a paper by Ransome, with this title, is timely; since it is well to emphasize the fact that the popular dread of this occurrence is out of all proportion to the danger, that it goes far beyond what the facts of the case justify, and that it is likely to cause grievous injustice to many poor invalids, and in some cases to endanger their prospects of cure. The controversy as to the possibility of contracting phthisis by contagion is a very old one, dating back before the time of Galen; but in all the evidence adduced in support of this assumption, the same defect is noticeable, an almost total lack of appreciation of the conditions favoring or attenuating the power of the bacillus for evil. Nevertheless, long before the discovery of the bacillus, and therefore before any measures of disinfection had been practised, the power of free ventilation to prevent the disease was fully recognized. From the universal testimony of the physicians to hospitals for consumptives; from the change in the death-rate in the army and navy and in public institutions, since the introduction of improved hygienic and sanitary conditions; from the fact that the same races of men in one environment escape almost entirely, while in another they are seriously exposed to its ravages; or even from the statistics of Dr. Cornet himself, to whom was due the most widespread influence in the alarmist direction, it may be confidently affirmed that whenever nature's disinfectants — pure air, light, and dry and pure soil — are to be found, there consumption is rare, but whenever there is overcrowding, filth and darkness, it breeds rapidly and carries off large numbers.

Ransome details the results of some experiments, both with pure cultures of the bacillus and with dried sputum (in some cases scraped and reduced to dust), under varying conditions of light and air, guinea-pigs being used for inoculation. It was observed that in all the specimens exposed in the dark tuberculosis was the result even in free currents of air, the minimum of such exposure necessary not being discovered, only three days being allowed to pass before they were removed from the air-current, but even then there was evidence that their virulence was attenuated. On the other hand, all the specimens exposed to both light and air, even for two days only, and for one hour of sunshine, were found to have entirely lost their power for evil. These experiments point out the line that should be taken in all efforts having for their object the eradication of tubercle from our midst. He is far from discouraging any of the measures suggested for the limitation of the disease, with the exception of the preposterous proposal for the entire segregation of all cases of phthisis; but in advocating such measures every precaution should be taken to guard against the inevitable effect upon the public mind of spreading these directions broadcast unless they are accompanied by reassuring annotations as to the absolute security that is given by efficient ventilation by night and day, by good drainage, and by an adequate supply of light. The chief reliance should be placed upon these essential requisites of all sanitation, and all our energies directed toward securing them, for it is mainly to them that the great diminution in the death-rate of phthisis during the past thirty years is due. It is surely within the province of medical officers of health, and in every way to the advantage of public health, to make these facts known rather than to strike a note of alarm as to the contagiousness of phthisis that goes beyond the facts.

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[1] Medical Chronicle, January, 1895.

Some recent investigations of Kirchner[2] also go to show how unnecessary such a scare is, since he has sought for tubercle bacilli many times in the dust of rooms occupied by large numbers of consumptive patients, but was successful in only one instance. He regards it as out of the question that phthisis is or could be communicated by air or dust if the sputum and other excreta from the patient are carefully disposed of, and the vessels and other utensils used by the patient thoroughly disinfected.

MIXED INFECTION IN PHTHISIS.[3]

At the close of an interesting paper on this subject, Elßner draws the following conclusions:

(1) Tubercle bacilli can, without the presence of added bacterial infection, cause changes in the lung, giving rise to symptoms of acute pneumonia in chronic or latent phthisis, which cannot be differentiated without bacteriological examination from non-tuberculous pneumonia.

(2) Concurrent infection in tubercular phthisis modifies very materially the course of the disease, giving rise to many acute exacerbations and anatomical changes; hence the conclusion is justified that the clinical picture of the disease is, as a rule, complex. The double infection must be taken into account when indications for treatment are considered.

(3) An acute croupous pneumonia can attack lung tissue, the seat of tuberculous infection, or run its course in any part of the healthy or diseased lung. As a rule, the tuberculosis, if latent, is lighted into activity.

(4) Aspiration from cavities of streptococci or other bacteria may give rise to acute pneumonia, a streptococcus pneumonia. Early and profuse hemoptysis is present in a majority of these cases.

(5) Mixed infection in pulmonary tuberculosis is an important factor in lowering vitality and the resistance of the patient; all septic and pyemic processes arising in the course of tuberculous disease may be traced to it.

(6) The differential diagnosis of tubercular pneumonia is ofttimes made with great difficulty. In all cases bacteriological examination must be made repeatedly, and culture experiments add to the refinement of such diagnoses.

Without repeated microscopic and bacteriological examinations it is impossible to determine the pathological significance of the innumerable exacerbations of pulmonary tuberculosis.

Spengler[4] has endeavored, in fifty cases, by means of bacteriological examinations of the sputum and carefully conducted autopsies, both from the bacteriological and anatomical standpoint, as well as by a careful comparison of their clinical histories, to get some explanation of the different types in which phthisis manifests itself. As a result he arrives at the following conclusions:

(1) In tubercular phthisis only a small percentage of the cases are uncomplicated cases of tuberculosis of the lungs. If fever is present in these pure cases, the extent of the mischief is much greater than the physical examination would lead one to suppose, and the prognosis is unfavorable. They become still more unfavorable in case a mixed infection is added. These cases are adapted to the tuberculin treatment.

(2) Most cases of phthisis are complicated by a mixed infection with streptococci and may be classified as active or passive, according as fever is present or not. The prognosis of the active form is good if it complicates a local tuberculosis, remains circumscribed, and receives prompt climatic treatment. Other bacteria, as well as the streptococcus, may complicate tuberculosis, such as Fränkel's diplococci, staphylococci, tetrageni, influenza and pseudo-influenza bacilli and others. If secondary bacteria appear in a few colonies only in several sputum examinations, fever, if it be present, is not due to the mixed infection but to the tuberculosis, or to some focus of infection other than the lungs. If fever is absent and yet streptococci are found in considerable abundance, the sputum should be carefully washed in order to rid it of accidental impurities from the upper air-passages; and then, if they still persist, the presence of bronchiectasis or cavities may be inferred.

The therapeutic indications are self-evident. Early diagnosis is essential before secondary infection has occurred; and the treatment should be "specific," that is, with tuberculin. Mixed infection can only be combated by pure air, either at sea, in the desert or on the mountains. After the secondary infection has been overcome and tuberculosis alone remains, tuberculin is again indicated.

Huguenin[5] arrives at very similar conclusions, and says that the prevalent idea that patients with fever are not fitted for high altitudes is radically wrong, as it is those cases with pus-infection in the lungs and secondary fever who are fitted for that, and only that.

AURICULAR MYOCARDITIS.[6]

Radasewsky reports fully the histories of six cases of heart disease in which the valves were not involved, and gives the results of a most thorough microscopical examination of the myocardium, which showed that apart from the often described disseminated fibrous myocarditis appearing in foci, a diffuse form existed which has received little if any attention from writers on the subject, and that this form is often more marked in the auricles than in the ventricles. In these cases the evidence goes to show that where the auricles are affected, either alone or with a coincident affection of the ventricles, marked irregularity of the heart's action had been present, while in those cases in which the auricle remained intact, or nearly so, the pulse remained regular, even up to the time of death, whatever the condition of the ventricular muscles. So far as it is possible to generalize from six cases, his observations show that in chronic myocarditis marked irregularity of the pulse is caused by disease of the auricles and not by alterations in the ventricle.

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[2] Zeitschrift f. Hyg. und Infektionskr. xix, i, p. 153.

[3] Buffalo Medical and Surgical Journal, November, 1894.

[4] Zeitschrift. f. Hyg. v. Infectionskr. Bd. xviii, p. 343.

[5] Schmidt's Jahrb., Bd. 247, No. 7.

[6] Zeitschrift f. klin. Med., 1895, Bd. xxvii.

CARDIAC THERAPEUTICS.

In a discussion on this subject at the Medico-Chirurgical Society of Edinburgh, Fraser[7] contrasts the action of strophanthus with other members of the digitalis group of drugs, and says that so far as experiment has proceeded, it occupies the first position in the action which is produced on the contractile power of the cardiac muscle. It increases the contraction of this muscle with a smaller quantity than any other similarly acting substance and with a rapidity unequalled by any of them. When the energy of the action of the members of this group on the heart is determined by perfusion experiments, strophanthus extract is found to be 8 times more powerful than adonidin, scillitoxin and erythophlein; 20 times more powerful than helleborein; 30 times more powerful than convallaramin; 300 time smore powerful than some specimens of digitalin and 3,000 times more powerful than others; and 30,000 times more powerful than caffein. None of them, however, act so powerfully upon blood-vessels as digitalin. Spartein slows the heart rather by weakening its systole and thus delaying the cardiac contractions than by increasing their strength. It has no direct action on the myocardium, but only on its regulating nerves, and even this can be produced directly only by large doses. The rapidity of action of strophanthus finds an explanation in the facts that the active principle is soluble in less than its own weight of water and that it preserves the diffusibility of a soluble crystalloid. The selection of the proper drug may be based on the considerations just given, but it is also to be recollected that the practitioner can generally best use for any definite purpose the remedy with which he is most familiar from practical experience. Personally, Fraser says that in a large number of cases he has never been disappointed by strophanthus in any reasonable expectation.

In continuing the discussion Bramwell[8] said that he most largely used digitalis in cases of failing compensation, whether with the object of producing temporary effects or of permanently sustaining the cardiac power and preventing further breakdowns of compensation, but agreed with Professor Fraser in thinking it most useful in mitral lesions, especially regurgitation with dropsy, irregular pulse, scanty urine, etc. In cases of aortic regurgitation it should be given more cautiously and for shorter periods, and cannot be expected to produce such satisfactory results as in cases of mitral regurgitation. In fatty degeneration of the cardiac muscle the use of digitalis in his opinion is not unattended by risk; and he has seen at least one case where rupture of the heart occurred during a course of the drug, and he was inclined to think it the result of its administration. On the other hand, he has found it of great service in some cases where grave symptoms seemed the result of a chronic myocarditis or fibroid degeneration, but he speaks with reserve on this point, owing to the difficulty or even impossibility of always making a diagnosis between these conditions. He always uses the tincture or infusion, since he has seen repeatedly decided poisonous symptoms follow the use of Nativelle's digitalin granules. When the pulse tension is high, strophanthus is usually to be preferred; when a rapid tonic and stimulating effect is to be desired, strophanthus combined with hypodermic injections of strychnia is of great value.

Balfour[9] said that unquestionably strophanthus in a sufficient dose contracts the heart rapidly and certainly; but there is room for doubt whether by this action it also acts as a diuretic, because in both hospital and private practice he had found it uncertain in all doses, and because we know that rest, warmth and diet effectively suffice to restore ruptured compensation in both hospital and private patients, and in this way act as efficient diuretics. The one great defect which he has found, in connection with strophanthus, is that though it forces the heart to contract, it seems to have no tonic action on it; it does not seem to promote the nutrition of the cardiac muscle so necessary to its restoration to a healthy tone, which is so characteristic of true digitalis action. This defect is a very serious one, especially in the treatment of that large and important group of heart cases included under the term of senile heart.

Regarding the danger arising from the use of digitalis, cases of heart disease, such as those commonly treated by the drug, are liable enough to sudden death from various causes, but we may acquit the drug of all share in the fatal issue. Excessive doses will often produce great uneasiness and discomfort; but cases are reported where enormous amounts have been successfully employed in the removal of dropsy, and he himself knew of a cardiac patient swallowing an ounce of the tincture with the sole result of keeping his pulse below 40 for a week. The tonic action of digitalis is ordinarily best maintained by giving the equivalent of a grain of the powdered leaves every twelve or twenty-four hours; such a dose can be kept up for months or years with only increasing benefit. Flabby, dilated hearts, if not much hypertrophied, and especially if young, may often be well contracted by larger doses administered more frequently, for example, one and one-half grains or more every eight or every four hours; but such doses require to be carefully watched since the primary slowing of the pulse may pass suddenly into the allorhythmic pulse of digitalis poisoning, a distressing enough condition, but not dangerous as long as the recumbent position is maintained. In aortic regurgitation, when the left ventricle begins to fail, whether the mitral valve has been opened up or not, digitalis in large doses, but with a considerable interval between, is imperatively demanded, and is often of the utmost benefit. The idea that a prolongation of the diastole favors further dilatation is a mere myth, since it is more than compensated for by the improved tone of the ventricle which slowly regains its compensation. For the removal of dropsy some degree of saturation is necessary; but, whatever the dose given, the equivalent of forty grains may usually be taken before symptoms of saturation appear. The more rapidly the drug is ingested the more certainly the diuretic action is attained, but once attained the drug may be discontinued for a day or two, and the effect continued by smaller doses persisted in for a longer time. When the pulse is hard and cordy and the limbs tense and brawny, digitalis is of no use, the blood pressure must first be lowered by free purgation, and some of the fluid drained off before the drug will act. Southey's tubes may also be of service, and diuretin is occasionally of great value.

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[7] Edinburgh Medical Journal, April, 1895.

[8] Loc. cit., May, 1895.

[9] Edinburgh Medical Journal, June, 1895.

POST-DIPHTHERITIC CARDIAC PARALYSIS.[10]

Veronese, in an exhaustive paper on this subject, says that no case has yet appeared in literature where death occurred entirely without warning, some suspicious symptoms having always been present for twenty-four hours at least. It attacks boys more frequently than girls, and is most common between the ages of six and fourteen. Children under six are almost never attacked, probably because in severe cases they usually succumb early in the disease; but adults are not altogether exempt. It varies in different epidemics, but occurs also among sporadic cases. Puny children, especially the tubercular and nervous, are more apt to be affected than the strong, yet in all cases it is preceded by severe general or local symptoms. The latent stage, that is, the period between recovery from the local process and the appearance of cardiac symptoms, lasts usually from two to eight days, but may cover from four to six weeks, although in the latter case the cardiac paralysis is the termination of a severe general post-diphtheritic paralysis.

The reason that the cardiac appears so much earlier than other forms of paralysis is due to the fact that owing to the delicate mechanism of the heart, a tiny lesion, by affecting important nerve centres, may produce most serious results on an organism already weakened or degenerated by the diphtheritic process.

In the so-called latent period a series of suggestive symptoms will not escape close observation, of which the most important are great prostration, apathy, somnolence by day, sleeplessness and restlessness at night, increasing dilatation of the heart with corresponding changes in the sounds, alterations in the character and rhythm of the pulse, increased frequency of respiration and signs of pulmonary edema, nausea, more or less constant pain in the epigastrium and increasing albuminuria. Fever is never present, at least as a result of the cardiac affection. An attack of syncope announces that the disease has reached its height, but the first one is rarely fatal. In cases which recover after two or three anxious days, the symptoms of stasis due to cardiac weakness begin to pass off, edema rarely lasting more than two weeks; but convalescence is very slow, requiring from two weeks to six or more months. Permanent lesions apart from a mild grade of hypertrophy do not seem to follow post-diphtheritic paralysis. The prognosis is very doubtful, though not always fatal; the milder the symptoms and the slower their development the better the outlook.

The anatomical lesion may be a parenchymatous degeneration of the heart with interstitial changes, fatty degeneration of the myocardium, parenchymatous and interstitial degeneration of the vagi and the nerves and ganglia of the heart, or degeneration of the sympathetic, especially the ganglion and plexus celiacus. It is probable that death is due less to degeneration of the heart than of its nerves and ganglia, and reflexly to degeneration of the sympathetic, especially the celiac plexus.

Reports of Societies.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

TWELFTH ANNUAL MEETING, HOT SPRINGS, VA.,
JUNE 13 AND 14, 1895.

AFTER a brief introductory address by the President, DR. S. E. SOLLY, a paper on

RECENT MEASURES FOR THE PREVENTION AND TREATMENT OF TUBERCULOSIS

was read by DR. GUY HINSDALE, of Philadelphia.

He reviewed the extensive provision for this class of cases in England, which country alone has eighteen institutions of this character, providing for between six and seven thousand patients annually; also the French hospitals at Berch-sur-mer, Arcachon, Cannes, Argeles, Ormesson, and that at Agincourt for the consumptive poor of Paris; the new institutions in Germany, at Rehburg for the poor of Bremen, at Malchow and Gutergotz for the poor of Berlin, at Spessart and at Vienna. In the United States mention was made of the new sanitarium at Liberty, in Sullivan County, New York, now being erected as a memorial to the late Dr. Alfred L. Loomis, a former president of the Climatological Association, by Mr. J. Pierpont Morgan; also of the new sanitarium now being constructed at Paul Smith's in the Adirondacks, and of the hospital for consumptives, for the erection of which the legislature of Massachusetts has recently appropriated $150,000.

The work of the Pennsylvania Society for the Prevention of Tuberculosis was referred to. It was organized to assist in preventing the disease by promulgating the theory of its contagiousness, instructing the public in the practical methods of prevention, and co-operating with boards of health in instituting such measures. The society has distributed 90,000 tracts on "How to Avoid Contracting Tuberculosis," and "How Persons Suffering from Tuberculosis can Avoid Giving the Disease to Others." Its funds are also used to provide hospital accommodation for consumptives. Vigorous efforts have been made by the society to secure better provision in Pennsylvania for this neglected class of cases.

In the discussion following, DR. FREDERICK I. KNIGHT, of Boston, said: When I was before the Finance Committee of the Massachusetts Legislature with reference to this very subject, the question was put to me, first of all, "Have the medical societies of the country made a formal declaration, which has been put on file, in regard to the establishment of hospitals for consumptives?" In England practitioners think the disease has been materially diminished by the hospital accommodations, which have been greater there than in any other country so far.

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[10] Wien. klin. Woch., Bd. vi, Nos. 17-22.

Dr. Thomas Darlington referred to a local evil in the northern part of New York City, which has some bearing upon the establishment of consumptive hospitals. Certain large tracts of land there are let out for pasture. In the midst of these tracts is a consumptive hospital. The patients play quoits in a field which has become literally covered with sputa; and here the cows pasture.

Dr. R. G. Curtin, of Philadelphia, read a paper entitled

A STUDY OF THE CAUSES OF SUBCLAVIAN MURMURS.

In the absence of the Chairman, **Dr. V. Y. Bowditch**, **Dr. E. O. Otis**, Boston, presented the

REPORT OF THE COMMITTEE ON HEALTH RESORTS IN THE UNITED STATES.

The Committee have issued a circular to all the health resorts in this country. The work of the Committee will appear from year to year in the Transactions of the Association, and ultimately in book form.

Dr. H. L. Taylor, of St. Paul, Minn., read a paper on

THE CLINICAL RESULTS OF THE USE OF TUBERCULIN IN PULMONARY CONSUMPTION.

He reported a total of 72 cases, with a complete analysis of 39 cases. Of these, 18 were far advanced, or third-stage cases, of which seven are now dead (but of these seven only two were given a long course of treatment, five being given but a short trial-course), five are worse, five have improved, and one has improved greatly. There were eight second-stage cases, of which one is dead, two are worse, one has improved, and four have improved greatly. There are 13 first-stage cases, of which one is dead, one is worse, and 11 have improved greatly.

Taking the first- and second-stage cases together — the only cases in which the physician would encourage a patient — we have a total of 21 cases, with a mortality of 10 per cent.; 14 per cent. have grown worse; five per cent. are improved; and 70 per cent. greatly improved. In the early cases by themselves, we have 84 per cent. greatly improved. Several of the cases reported have been treated with Kleb's antiphthisin, which promises to supplant the crude tuberculin in the therapeutics of consumption.

Personally, Dr. Taylor said, I am thoroughly convinced that tuberculin is our most certain remedy for this disease, not that it is or can become a specific. Its careful use is not dangerous. In beginning cases, its use should be encouraged; in advanced cases, without too pronounced sepsis, it may be given a trial.

Dr. Beverly Robinson: The use of tuberculin has been before the medical profession now for several years; we have had excellent opportunity of studying its effects, and the consensus of opinion is, I think, that no particularly beneficial results are obtained.

Dr. C. E. Quimby: I have continued to use tuberculin in a certain class of cases.

Dr. F. I. Knight: There are cases in which it may do good. Where patients bear it without extreme reaction, by the use of minute doses, carefully, there is a definite gain.

A paper entitled

A CASE OF TRAUMATIC CARDIAC NEUROSIS,

was read by **Dr. J. C. Mulhall**, of St. Louis.

SUNSHINE STATISTICS,

was the subject of a paper by **Prof. Mark W. Harrington**, Chief of the Weather Bureau, Washington.

The sunshine, that is, the presence of a direct ray of the sun, not shut off by cloudiness, forms one of the most interesting elements of meteorology, from a sanitary standpoint. It is therefore of interest to this Association. The data considered were all from the United States, with the exception of two stations in Canada. The number of years during which these data have been collected is smaller in the United States than in Great Britain, and there is a large literature and a long series of observations in English and other European publications. In this country the longer series have been taken at Central Park, New York, and at Blue Hill Observatory, near Boston. The data considered were from twenty stations in the United States; they were illustrated by tables which gave the average percentage of sunshine for each hour of the day for each month of the year.

The paper was divided into three parts: a description of the photographic sunshine recorder, with the results obtained from it; second, a discussion of the thermometric sunshine recorder; third, a comparison of the results obtained in the United States from these two records. These instruments seem to be not yet absolutely perfected. There is a difference in sensitiveness. All instruments are not strictly identical in respect to the quickness with which they respond to changes in cloudiness or sunshine. A dense cloud suddenly obscuring the sun in bright sunshine, will not be recorded within three or four minutes, and *vice versa*.

From the comparisons at Buffalo, no definite conclusions could be drawn. The Portland comparisons were limited to three months. For Salt Lake City, there were fifteen months' comparative readings, at a station where the sunshine is not far from the average for the whole country. The results present some curious anomalies. In January the photographic recorder registered the greatest amount of sunshine by fifteen hours. The cloudiness was above the average. In February, with cloudiness about normal, the thermometric recorder registered the greatest amount by twenty-one hours.

The comparisons thus far made seem to establish the following: (*a*) The thermometric recorder registers the greatest amount of sunshine during the warmer hours of the day; the photographic during the hours from sunrise to about 11 A. M., and from about 4.30 P. M. to sunset. (*b*) The differences between the two instruments for a considerable period — as a year — are not great. (*c*) With increase in skill in manipulating the instruments and tabulating the data, the two forms of apparatus will give almost identical results in the long run.

Dr. W. F. R. Phillips, of the Weather Bureau, read a paper on

MEAN ATMOSPHERIC TEMPERATURES.

The fact that two or more places may have the same mean temperature, either annual or monthly, does not of necessity imply identical thermal conditions. An example will illustrate this fact more forcibly. Thus Des Moines, Iowa, and Tatoosh Island, Washington, have the same annual mean temperature, namely, 49°. But the mean temperature of the hottest month is 75° at Des Moines and 56° at Tatoosh Island. The mean temperature of the coldest month is at Des Moines 18°, and at Tatoosh Island 41°.

Throughout the month of July the average daily temperatures exceed 70° in the States bordering on the South Atlantic and Gulf coasts and in the greater part of the Middle Atlantic States.

Statistics were given as to the mean minimum temperatures and the mean maximum temperatures in July.

East of the Mississippi River we may expect a mean daily range, or a daily difference between the highest and the lowest temperatures of the day, of about 18°, and west of the Mississippi a difference of from 5° to 10° greater, increasing with the elevation above sea-level. On the Pacific slope, the difference ranges from 10° to 15°, but may vary greatly as affected by either altitude or proximity of the water.

The variability of temperature or average difference from day to day, is less in July and August than in any other months of the year, and it is so nearly alike in either that it is not practicable to discriminate between them in this respect. In other words, July and August are the most equable months of the twelve as regards temperature. On the Pacific and Gulf coasts the variability is little more than one degree. As we go northward and inland the variability gradually increases. In the latitude of Savannah it is equal to two degrees, and in that of Washington City three degrees. The greatest variability is observed in Montana and in the Dakotas where it reaches four to five degrees.

East of the Rocky Mountains the highest one-day mean temperatures have been observed generally in the central valleys and in the South Atlantic States. The highest mean recorded for one day is 94° at Augusta, Georgia, and the next highest 93° at Kansas City and San Antonio. Temperatures of 91° and 92° have been recorded generally throughout these regions. On the immediate Gulf coast and in the extreme lower Mississippi Valley, the highest means for one day that have been noted have been from 87° to 89°. In New England, the Middle Atlantic States, the region of the Great Lakes, the Rocky Mountain and the Plateau regions, the highest mean temperatures for one day have been about 85°.

The lowest mean temperatures for one day have ranged from 75° on the Gulf to 55° in the northern portions of the United States. In the greater part of the country the lowest mean temperatures range between 60° and 65°.

Dr. Richard C. Newton, of Montclair, N. J., read a paper on

SOME OBSERVATIONS WHICH APPEAR TO ESTABLISH THE AERIAL TRANSPORTATION OF MALARIAL GERMS.

After reviewing the evidence brought forward to prove the transmission of malaria by water, to which theory he gives assent, he took up the literature bearing out the belief in aerial transmission. His own observations in the Indian Territory, while post-surgeon in the United States Army, corroborated this view. The hygiene of this fort was defective, owing to clay soil and rank vegetation. In the seven companies quartered at Fort Sill, 97 per cent. of the men fell ill with malaria. It was shown by diagrams that the number of cases of sickness and days of sickness increased for each company, with one exception, in direct ratio to its proximity to the banks of a creek. (The company least affected was quartered in a spot that was most readily swept by the prevailing wind.) Dr. Newton believes it fair to assume that in places ordinarily non-malarial, the drinking-water is probably the more frequent cause of ague, when it does appear, than the atmosphere; but that in places like the campagna of Rome, the Orinoco River in South America, and the jungles of East India, where malaria is so constant and so deadly, the atmosphere is the usual method of its transportation.

THE GEOGRAPHICAL DISTRIBUTION OF THE MINERAL SPRINGS OF THE UNITED STATES,

by **Dr. A. C. Peale**, of Washington.

Dr. Peale has recently compiled two maps, one showing the distribution of the 330 springs, the waters of which are put upon the market to the amount of twenty million gallons annually, with a valuation of between four and five millions of dollars. Upon the other was plotted nearly 700 mineral-spring resorts. The majority of the springs used commercially are found in the Eastern United States and in the Mississippi Valley. This is not because the total number of the springs is so much greater in that region, but because the resources are better utilized.

That a spring is thermal depends upon its geologic position. Inasmuch as mineral waters derive their solid constituents from the rocks through which they pass on their way down and up before their emergence as springs, there must be an intimate connection between them and the geological structure of the country. A comparison of the geological map of the United States with a map of its mineral springs is very instructive in this respect. In regions where the older or metamorphic rocks constitute the surface formation, or are near to it, the waters, as a rule, contain a much smaller percentage of solid contents than in those regions where the water, to reach the surface, must come through sedimentary rocks, which are not only more readily affected by the solvent powers of the water on account of their structure, but naturally contain a larger proportion of readily soluble salts.

The practical point for the physician is, that within our own borders we have springs that duplicate those of Europe, or, indeed, any part of the world. And we have them at all elevations, from the Atlantic and Pacific coasts to the high mountain areas of Colorado; and under all climatic conditions, in Colorado, Southern California, Alaska and New England.

THE INFLUENCE OF HEREDITY UPON THE PROGRESS OF PHTHISIS,

by **Dr. S. E. Solly**, Colorado Springs.

The paper begins with a discussion of the ways in which the family may affect the development of phthisis. First, by direct transmission of the bacilli. In support of this the author cites cases reported at the last Paris Congress of Tuberculosis, the work of Birch-Hirschfeld and of Whittredge Williams, as well as the experiments of Héricourt, Richet and Gertner. Second, the inheritance of susceptibility. This inherited susceptibility may be that of a general deficiency or lack of power of resistance, or of a more special character, whereby the bacilli readily find entrance and are easily conveyed from one part to another; or the physique is perhaps more often one in which both of these conditions prevail. Third, family contagion. This the writer took to mean reception of the disease by inhalation.

The paper gave an analysis of 250 cases. These cases confirmed in a general way what has been demonstrated by other observers, namely, that whatever may be the explanation of the pathologic connection between the consumptive and his phthisical relations, there are certain broad differences in the character and course of hereditary phthisis when compared with that of the acquired disease. These, stated briefly, are that the percentage of females is higher among the hereditary than the acquired cases; and the female hereditary cases exhibit the characteristics of their sex, when phthisical, much more strongly, being earlier attacked and more of them dying within eighteen months, and also in showing less resistance. The male hereditary cases exhibit relatively the same peculiarities as the male acquired. The hereditary cases as a whole are attacked much earlier than those in which the disease is acquired, and the proportion of cases in the first stage, when coming under medical observation, is much greater among the hereditary.

In considering the origin and natural history of family phthisis, the statistics given can be compared with a large number of other reports; but as to results, the data for comparison are more meagre, especially in reports from cases treated in high climates. However, those that are avaliable bear out in the main the same conclusions, namely, taking all the cases in all stages together, and comparing the hereditary with the acquired, the results are better among the acquired than among the hereditary; while in the first-stage cases alone, there are more benefited of the hereditary than the acquired.

The parental cases are shown to do better than the grandparental or collateral, and the acquired better than the parental, except in the first stage. In comparing the totals of the paternal, maternal and acquired cases, the writer's statistics show that the most benefited are, first, the acquired; second, the maternal; third, the paternal. Thompson's order is, first, acquired; second, paternal; third, maternal. While there is a strong resemblance between the writer's cases and those of others, there are points of difference, some of which are probably due to the especial influence of altitude. The theory that under certain conditions family phthisis grants immunity, or modified immunity or tolerance, receives some support from these inquiries, and from the writer's own clinical impressions, but especially from the fact that hereditary cases, when they do not die in the onset of the disease, as so many do, are generally more chronic in their course toward death or recovery than acquired cases. And it may be said that the knowledge of inheritance, though depressing to the descendant, is also salutary in inducing prudence of life and a ready resort to medical aid when attacked.

Papers were read by Dr. Beverly Robinson, New York, on

ETIOLOGY AND TREATMENT OF CERTAIN KINDS OF COUGH,

by Dr. J. C. Mulhall, St. Louis, on

A CASE OF SIMPLE CHRONIC PLEURAL EFFUSION,

and by Dr. Thomas Darlington, Jr., New York, on

TWO FACTORS IN THE PRODUCTION OF DISEASE IN NEW YORK CITY,

These the writer considered to be, first, malaria, and, second, a fecal fermentation producing diarrhea. Cases of malaria are found all over New York City, principally in the northern districts. This he considers to be due to numerous swampy places which occur in cup-shaped places on the hills and cannot well be drained, as they are formed largely of rock; also to the opening of the streets in the upper part of the city and to the use of old water-pipes.

The second condition described was that of fecal fermentation producing diarrhea, generally occurring every morning. Dr. Delafield has also recently written on this subject. This diarrhea, he stated, affected every class in the city, and probably was caused by the Croton water. The symptoms are recorded in detail. The customary treatment in New York is to use intestinal antiseptics combined with an exclusive diet of milk or meat. These remedies gave temporary relief, but the only certain remedy was a change of climate, which in most cases acted like magic.

The following resolution, on motion of Dr. Frederick I. Knight, was unanimously adopted:

Whereas, Since tuberculosis has been demonstrated to be a communicable disease, it has become doubly desirable that hospitals for the reception of the poor afflicted with this disease should be established.

Resolved, That the American Climatological Association recommend the establishment of such hospitals in every State, not only for the relief of the great suffering attending this disease among the poor, but also as a protection of the community against its spread.

At the request of the Association, Dr. C. E. Quimby, presented the following resolution:

Gentlemen of the American Climatological Association: — Duty and established custom makes it fitting that in formal manner your Committee report to this Association the death upon January 23, 1895, of our former President and member, Alfred L. Loomis, M.D., LL.D.

Love and respect make it imperative that in so doing we dwell for a moment upon the many ties which united us, and make some record by which his many and varied gifts and qualities which have enriched us may be made a powerful influence upon those who are to continue this Association.

Dr. Loomis was born in Bennington, Vt., in 1831. His early education was largely under private tutors at Woodstock, Vt., while his academic degree was taken at Union College. After graduation in 1852, at the College of Physicians and Surgeons, he served the usual term in Bellevue Hospital. Very soon after starting in private practice, he was appointed visiting physician to the same hospital, where he continued in active duty until the day of his final illness. For more than thirty years, Dr. Loomis held the chair of Pathology and Practice in the Medical Department of the University of the City of New York, and to his energy and wise efforts, more than to any one other force, may be attributed the growth and prosperity of that institution.

In his professional life, Dr. Loomis was pre-eminently an active, energetic, sagacious physician. In all his relations to medicine and medical progress, he was conservatively but uniformly progressive; never assuming an advanced position until fully convinced of its accuracy, he was unfaltering in its defence. A similar faith in the eventual success of truth, made him unable even to consider the possibility of failure in any purpose once undertaken.

Dr. Loomis was one of the faithful band who originated this Association, and we all well know how faithfully he worked for its advancement and success. He was its first president and was again its president during the first Congress of American Physicians and Surgeons in Washington assembled, and, as our delegate, was elected the president of the third Congress.

At one time efforts to merge the American Climatological Association into another national organization threatened to destroy it. Dr. Loomis averted the danger, if any such existed.

Dr. Loomis had a most enviable reputation, not only in his professional but also in his private life. He was a frequent contributor to the proceedings of this Association.

In expressing our sense of personal as well as united loss in the death of Dr. Loomis, we realize that we can do him no greater honor than to present this record of his work for a perpetual stimulus to members of this Association.

Officers for the ensuing year were elected: President, Dr. James B. Walker, Philadelphia; Vice-President, Dr. C. E. Quimby, New York; Treasurer, Dr. James E. Hart, Colorado; Secretary, Dr. Guy Hinsdale, Philadelphia.

Dr. Frederick I. Knight, of Boston, was elected Representative to the Executive Committee of the Congress of American Surgeons and Physicians, and Dr. R. G. Curtin, of Philadelphia, alternate.

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NEW HAMPSHIRE MEDICAL SOCIETY.

One Hundred and Fourth Annual Meeting, at Concord, N. H.

The one hundred and fourth annual meeting of the New Hampshire Medical Society convened in G. A. R. Hall, June 3 and 4, 1895.

The meeting was called to order at 11 o'clock by President **David P. Goodhue**, M.D., and prayer was offered by Rev. **Howard F. Hill**.

The meeting was a large one for a small State, there being over one hundred and fifty members registered.

After the appointment of the usual standing committees the reading of the following papers was taken up:

THE GERM CONSIDERED AS A PRIME FACTOR IN THE PRODUCTION AND TREATMENT OF DISEASE,

by **Dr. S. W. Roberts**, Wakefield; the discussion opened by **Dr. L. G. Hill**, Dover.

The second paper was on

CONGENITAL IMBECILITY,

by **Dr. Edward French**, Concord, N. H.

REPORT ON SURGERY,

by **Dr. J. Franklin Robinson**.

The subject chosen for this paper was the Alexander operation for shortening the round ligaments, as a cure in cases of chronic retroversion. A detailed account of this operation is given in the *Annual of the Universal Medical Sciences*, issue of 1889. Several cases occurring at the Eliot Hospital at Manchester, N. H., were reported. All these cases had been under treatment more or less constantly for years without permanent benefit, but after the operation each one expresses herself as constantly improving in health and strength. The strictest antiseptic precautions were used both during the operation and convalescence.

The Alexander operation should not be attempted if the uterus is fastened in retroversion by strong adhesions or pelvic infiltrations; but in suitable cases it offers a ready and safe means of restoring the uterus to its normal condition, with a fair certainty of its remaining there permanently.

Dr. Adams, of Manchester: As I understand, the Alexander operation is only applicable to cases where there is retroposition of the uterus with no adhesions, no pelvic peritonitis or inflammation, with a proper support from below, that is, a normal vagina, a normal perineum, a normal-sized uterus, after all other means, except section or celiotomy have been tried and failed. This limits it to a very small scope. To attempt to hold the uterus up as from prolapsus by the round ligaments would be absurd. To attempt to hold it forward, when there are adhesions with retroversion or retroflexion, would be absurd. To attempt to hold up a uterus two or three times its normal size without other means of reducing the size — say, a sub-involuted uterus as the result of lacerated cervix, would be absurd. To attempt to hold up a uterus with a ruptured perineum, with prolapsed vagina, with endometritis, etc., without the operation for correcting the perineum and correcting the vagina, I think would be absurd. Still, we find cases where we have retroflexion with a very small uterus, and where apparently the vaginal wall, the perineum, etc., are intact, and where there are no adhesions, and where there is no disease of the pelvic cavity; and to these cases I think it is applicable, and I believe, as a primary and only operation it is of great benefit.

There is another field for Alexander's operation, as a support to other operations. I believe it may be of benefit where we have retroposition with dilated vagina, ruptured perineum and enlarged uterus. If the other parts are corrected — if the uterus is corrected, and the cervix is operated upon — I believe that Alexander's operation may be added to it with benefit. If there is a ruptured perineum with prolapsus of the posterior wall of the vagina, carrying the uterus down with it, that condition may be corrected and the supports from below properly corrected, and this operation added with much advantage.

There are some objections to Alexander's operation. First, it puts the uterus in an unnatural position and fixes it there; it tips it forward onto the abdominal wall and bladder, and fastens it there. The uterus is a very movable organ; it is susceptible of positions ranging from forty to sixty degrees; and still, when it is tipping back and forth, remains all right and natural. But this fastens it. From this fixation we sometimes get irritation of the bladder. Another drawback is the dragging sensation on the cords. In one case after operation there was a great deal of neuralgic pain from the dragging on the cords, as I attributed it. I saw a report of one case of abortion as the result of this operation, pregnancy following not a great while after, and the patient aborted; and it was attributed to the shortening of these cords. In some cases the cords have stretched after a time and let the uterus down again.

There is a great variety of operations for shortening these cords. Some perform celiotomy, taking the cord in the abdominal cavity, doubling it upon itself, and putting a ligature around it on each side. Others cut the entire canal to the internal ring, and make their fastening at this point. The objection to tying at the external ring has been raised that hernia is liable to follow. In drawing the cord out we draw with it a cuff of peritoneum; and if pains is taken to sew the peritoneum and set up sufficient inflammation to form adhesions back to the internal ring, I presume it would prevent hernia, still I have seen a report where three per cent. has been followed with hernia.

DR. ROBINSON, Manchester: The Alexander operation merely confines the uterus to the position it generally occupies — anteversion. After a few days the patient can retain urine longer, because the inflammation of the uterus has subsided. The ligaments will stretch in some cases, but why should there be any more danger of the uterus becoming retroverted after pregnancy following the Alexander operation, than after pregnancy in a uterus which has never been displaced? The shortened ligaments retain the uterus in the position of anteversion, provided there is a good perineal floor to support the uterus. The round ligaments cannot be expected to hold up the whole abdominal contents. In Alexander's operation the peritoneal cavity is not entered. Hernia has followed in some cases after the operation, but the Alexander operation has been used as a cure for hernia.

ON ELECTRICITY IN THE HANDS OF THE GENERAL PRACTITIONER,

by **DR. G. H. SALTMARSH**, Lakeport.

Removal of Facial Blemishes. — The process is very easy, requiring but little skill, and a comparatively inexpensive outfit, consisting of a galvanic battery, milliampère-meter, two conducting cords, a sponge electrode, needle-holder, needles, and a pair of depilatory forceps. The patient should be seated or semi-reclining before a well-lighted window, holding in the hand the sponge electrode, previously moistened and connected with the positive pole of the battery. The operator, with the needle-holder in the right hand, introduces the needle into the follicle beside the hair until it has reached the base; the circuit is then completed. A few seconds' time is allowed, during which the forceps are applied by the left hand, slight traction is made, and if the follicle is destroyed no particular force is required to remove the hair from its bed. It is better not to remove several hairs that are in close proximity, but over a scattered area, as this will prevent the possibility of lighting up any inflammatory action. Usually from twenty to fifty hairs may be removed at one sitting. The eyes of the operator will tire of this somewhat trying process if continued too long, and the patient will, although suffering no pain, get restless. The current need not be stronger than three or four milliampères.

The removal or destruction of papillomatous growths and small nevi may be accomplished in much the same manner. The sponge electrode is held by the patient or placed firmly against some part of the body. A single needle of somewhat larger size than the one for the former work is used, or the double conducting cord with two needle-holders attached, and the latter seems preferable, especially if the base of the growth is of any considerable size, as one needle may be removed and reinserted while the other is doing its work, and the patient will hardly realize what is being done. The needle should enter at the junction of the growth with the healthy skin, or slightly beyond it, carried through and out at the opposite side at the same line. It should remain in position from twenty to forty seconds, or until electrolytic action is thoroughly accomplished. The number of punctures necessary will depend upon the size of the growth and strength of the current. The distance between them should be about one-sixteenth of an inch. From three to five milliampères is sufficient for ordinary cases. The cicatrices remaining after this procedure are noticeably less than after the use of the knife. The total obliteration of the supplying vessels causes the immediate death of the excrescence if the operation has been carefully done; and in a few days the mass falls off, leaving a smooth, healthy tissue.

Urethral Stricture. — In regard to the treatment of urethral stricture, the method of Dr. Newman, one of the most enthusiastic as well as successful operators, was described.

Prostatic Hypertrophy. — Although not having applied electrolytic treatment to hypertrophied prostate according to the strictly scientific method, the results from rather a crude process would tend to show that it is a potent remedy.

Uterine Fibroids. — With reference to the treatment of uterine fibroids, the methods and rules of Apostoli were described.

DR. GILMAN D. FROST read a paper on

CANCER.

Dr. Frost described at length several cases of cancer, each of which was to be taken as the type of its class, taking first, cancer of the lip as an example of the epidermoid. Such an ulcer if left to itself may cause but little trouble for months, perhaps years, but sooner or later it will attack deeper and adjacent structures. The progress of growth and breaking-down then becomes rapid, the general health suffers, and death finally ensues. The whole process may have lasted from two to five years.

The seat of the columnar-celled cancer is usually the rectum, the intestines or the uterus. Unless removed, such a cancer grows steadily worse, involving other organs; and death ensues either from a general failure of vital power on account of the discharge from the cancer, from hemorrhage, or from worry. The patient seldom lives more than three years from the first appearance of the disease.

It is difficult to distinguish between the three forms of spheroidal-celled cancers, and in some cases it is quite impossible to say which form we are dealing with; but in all cases the progress of the disease is very rapid and attended by much pain, great swelling and a profuse discharge. As in other cases, death comes finally as a result of the drain made on the general health, hemorrhage, pain, anxiety, loss of appetite, improper food-supply, and want of sleep. The time required for the development of such cancers varies from a few months to two years.

After mentioning various theories as to the cause of cancer, Dr. Frost recommended excision as the best treatment, whenever that was possible. In case of cancer of the lip statistics vary much, but are on the whole more favorable than for mammary cancer. Rectal and uterine cancers are little affected by operation, and are sure to recur. Lately many cases of cancer, otherwise inoperable, have been treated by giving the patient erysipelas in the region affected, and still more lately with toxines of the bacillus prodigiosus.

DR. DOUGLAS, of New York, advised the use of a very simple remedy, a preparation of white cedar. He did not claim that it would cure all cases of cancer, but in his own practice he had met with very good results where an ointment of white cedar had been faithfully used.

Dr. E. E. Graves, of Boscawen, had used sulphate of magnesia (Epsom salts) with good results.

This paper was followed by a dissertation on

DIARRHEA,

by Dr. Benj. Cheever, of Portsmouth.

SOME OF THE USES OF STROPHANTHUS,

by Dr. W. K. Wadleigh, of Hopkinton.

The physiological action of strophanthus may be said to be similar to that of digitalis, but there are some points of difference. Unlike digitalis it has very little power to contract the small blood-vessels. As a diuretic it is much more sure and certain than digitalis. The effect produced by strophanthus is almost immediate, though not so prolonged as that of digitalis, and it almost never produces any unpleasant stomach symptoms, no matter how long administered. Strophanthus may be used with more or less benefit in most cases where digitalis is indicated, but it is more especially in a few conditions in which digitalis is not so generally applicable, that strophanthus finds its chief usefulness. Strophanthus is well adapted to the treatment of aged people, especially in vertigo caused by cerebral anemia, in angina pectoris, in general anemia accompanied by weakness of the heart, and in the so-called irritable heart characterized by palpitation and more or less pain.

The best preparation of strophanthus is the tincture prepared from the seeds, given in doses of one to ten minims. It is rarely necessary to give larger doses than five drops three or four times a day.

SECOND DAY.

The following officers were elected: President, Dr. E. F. McQuesten, Nashua. Vice-President, Dr. A. P. Richardson, Walpole. Treasurer, Dr. M. H. Felt, Hillsboro. Secretary, Dr. G. P. Conn, Concord. Executive Committee, Dr. Charles R. Walker, Concord; Geo. D. Towne, Manchester; F. A. Stillings, Concord; W. F. Smith, Hanover; F. E. Kittredge, Nashua. Anniversary Chairman, Dr. A. N. Smith, Dover. Committee of Arrangements, Drs. Stillings, Sullivan, Day, Lovejoy, McMurphy, Adams, Concord; also a council consisting of twenty members and a board of censors having ten members.

At the conclusion of the business session the regular order of papers and discussions was taken up as follows:

ON BACTERIOLOGICAL DIAGNOSIS OF DIPHTHERIA,

by Dr. Herbert C. Emerson, Concord, N. H.

The fact is now attested that diphtheria is due to a specific micro-organism, which can be readily isolated, and demonstrated by culture from swabbings of the mucous membranes affected. The specific bacterium of this disease was first recognized by Klebs in 1883, and cultivated and described in 1884 by Löffler, and is called the Klebs-Löffler bacillus. This organism is rod-shaped, two or three thousandths of an inch in length, and has a characteristic morphology. It appears generally as a rod swollen at either end or in the middle. It grows freely in the presence of oxygen at the body temperature, and in separate fragments of diphtheritic membrane preserves its vitality for months. It may be found not only in the exudate of pharynx, larynx or nose, but also in almost any morbid condition which may be concurrent.

The technique of its identification is as follows: Sterilized cotton swabs are wiped across the mucous membrane affected, and are then wiped over the surface of the sterilized culture media. Various culture media may be used for the cultivation of the bacilli. Löffler has suggested a mixture of blood serum and sugar bouillon, and this is now commonly used in making cultures of Klebs-Löffler bacilli. This medium consists of three parts beef-blood serum, and one part of a one-per-cent. sugar bouillon, solidified in slanting test-tubes at a low temperature, and sterilized by steam. Having inoculated a test-tube of the serum with the swab, the tube is then placed in an incubator, and kept at a temperature of 37° C. for twenty-four hours. At the end of this time numerous aggregations or colonies of Klebs-Löffler bacilli appear on the surface of the serum, as small, raised, rounded, dry-looking elevations. With a sterilized platinum needle a cover-glass is smeared with a single colony, stained with one of the aniline dyes — methylene-blue in an alkaline solution being the best — and the cover-glass then mounted in balsam and examined under a microscope, using an oil immersion lens of at least one-twelfth of an inch power.

The evidence to-day is stronger than ever that the bacterium in question is the specific infecting agent of diphtheria. Löffler, in his demonstration of 1890, says: "First, it is found in all undoubted cases of diphtheria. Second, the Klebs-Löffler bacillus is found only in diphtheria. Third, pure cultures of this bacillus induce characteristic diphtheritic inflammation when inoculated into the mucous membrane of certain lower animals."

Continued study of the micro-organisms found in the various affections of the throat, has given us the following *résumé* of the etiology of diphtheritic and pseudo-diphtheritic inflammations. The mouths of most people always contain a variety of micro-organisms, two of the most common being the streptococcus and the staphylococcus pyogenes aureus. Under favorable conditions either one or both of these germs become greatly increased in number, and infecting the mucous membrane at some point, produce the condition of inflammation, varying in degree from one of simple congestion to that of the clinical appearance of diphtheria. These cases should always be isolated, and treated as mildly infectious affections.

Infection by the Klebs-Löffler bacilli may produce almost no signs or symptoms, these cases being of very short duration, the non-susceptibility of the patient accounting for the lack of disturbance. Such cases are to be regarded as sources of danger, and persons in charge of diphtheria cases whose throats may temporarily show these bacilli are also to be so regarded. Daily bacteriological examinations are to be made in all doubtful cases until the diagnosis is clear. Patients convalescent from diphtheria are to be regarded as sources of danger as long as Klebs-Löffler bacilli are found to be present by bacteriological examination, and they have been found in such cases from a few days to three months after the disappearance of all membrane. The early bacteriological examination of all suspicious cases cannot be too strongly urged.

This paper was followed by a report on

SERUM TREATMENT OF DIPHTHERIA,

by **Dr. C. P. Frost**, the discussion opened by **Dr. Edward Sullivan**, M.D., Concord.

MODERN METHODS OF TREATING DISEASES OF THE NOSE AND THROAT,

by **Dr. O. B. Douglass**, New York.

Of the two hundred and fifty, more or less, distinct diseases that flesh is heir to, a large percentage show effects in the throat, not mere complications, but as a part of the disease. That which in common parlance is termed catarrh is but a symptom, an expression or effect of a diseased condition. Patients will tell you that they have pain in the nose, over the eyes, in the temples, or back of the ears; that they have a hacking cough and a frequent desire to clear the throat. These ills may result from one and the same cause. Having determined the cause, we seek to remove it. If it be a syphilitic sore throat, positive results will often be gained from the use of large, increasing doses of potassium iodide. Locally spray the diseased parts with peroxide of hydrogen and insufflate aristol.

The underlying principle in the treatment of tuberculosis of the larynx is to destroy the germs by curetting, and applying either pure lactic acid three times a week, pure ichthyol (Dr. Bereus's method), or a twenty-grain solution of silver nitrate. A later method, the injection of creosote, which promises excellent results, is described by Dr. Chappell in the *New York Medical Journal*.

Sarcoma and carcinoma are best treated by extirpation, if that is possible. Dr. Coley reports some wonderful results from the injection of the specific germ of erysipelas into the tissues surrounding these tumors in cases where they cannot be removed.

In treating diphtheria and all acute inflammations of the throat, mild medicines given often will give better results than harsh and heroic treatment at longer intervals. It is doubtful if antitoxin has come to stay. Professor Winters gave recently, at the New York Academy of Medicine, an *exposé* of its use in the Willard Parker Hospital for Contagious Diseases. It seemed to do more harm than good.

The most widely spread and destructive of the diseases of the throat and nose is that which causes catarrh. To find the cause of this disease first examine the mouth and throat. A typical case of catarrh will show a relaxed uvula, enlarged tonsils, follicular pharyngitis, thickened and inflamed tissue back of the posterior pillars of the fauces. There will be some hoarseness and tendency to cough. The vocal bands will be slightly colored; the whole larynx congested. In the superior pharynx the adenoid growth will be enlarged, the posterior ends of the turbinate bodies hypertrophied, the septum thickened, and the whole passage bathed in a thick, tenacious fluid. Upon examining the nose, the inferior turbinate body will be seen to be enlarged, the septum more or less deflected. Above the inferior body will be a mass filling the fossa and pressing upon the septum. The application of a ten-per-cent. cocaine solution blanches and contracts the tissues about the lower turbinate body, but reveals clearly the stubborn persistence of the middle turbinate body, which is still tender. It is difficult to believe that the little mass we saw pressing the septum is the cause of all the suffering attendant upon catarrh. It is now believed that the hypertrophied middle turbinate body is capable of more mischief and can cause more suffering than any other mass of its size in the human body. It will not contract; it must be removed. Anesthetise it as thoroughly as possible; then with scissors adapted to the work shear off such portion as must come away in order to leave the space clear, not cutting away more than is absolutely necessary, but being sure to get just enough. This cannot be cut off at the other end, and the mass must be twisted off with forceps. A pledget of cotton wound loosely upon an applicator moistened in a solution of aceto-tartrate of aluminum is inserted, and a cotton tampon placed in the nostril anterior to the first. This is to be changed as often as it becomes moistened. The former may remain twenty-four hours or longer, as aluminum is one of our best antiseptics. This operation is the one most frequently required, but any persistent contact of surfaces in the nose that ought not to touch will certainly cause trouble, and must be relieved. The question arises how a mere contact of surfaces in the nose can cause so much trouble. First, the immediate local effect upon two sensitive surfaces must be irritating. Second, the nose being an important organ directly communicating with the brain, must be carefully guarded; hence there are numerous reflex irritations resulting from this primary cause. Third, secretions, which are profuse in the nose, are retained by this artificial dam, become acrid, overflow their bounds, and produce congestions and inflammations. Fourth, by extension of these induced troubles to other organs — the lachrymal ducts, Eustachian tubes and middle ears = acrid secretions are forced into the orifices of the tubes, and deafness results in many cases.

This paper was followed by a dissertation on the

PHYSICAL BASIS OF CRIME,

by **Dr. John J. Berry**, Portsmouth; discussion opened by **Dr. C. P. Bancroft**, Concord.

CONSERVATISM IN MEDICINE AND SURGERY,

by **Dr. G. P. Conn**, Concord; discussion opened by **Dr. Charles R. Walker**, Concord.

PRESIDENT'S ANNUAL ADDRESS.

The following is an abstract of the Annual Address delivered by the President of the Society, **Dr. David P. Goodhue**:

New ideas should not be accepted because they look well, or coincide with ideas we had previously formed, nor because they were promulgated by our friends, but they should be taken on their own merits, and stand or fall as the case may be. A good many of our patients are like Naaman of the Old Testament; they want some mighty work done for them. They forget the cleansing effect of good air and pure water.

The population of our country towns is fast decreasing, and many of those who stay on the farms barely make a living, and when sickness comes they are easily discouraged, and are in no condition to pay for medical attendance if it is of long duration. Other expenses arise, and the physician's bill goes on until it is outlawed, or settled by death, as many physicians' bills are settled.

Why should the physician be called on to contribute for every object, to give liberally for the support of some pastor to whose teaching he does not subscribe, and then be expected to attend that pastor and his family professionally, without receiving any pecuniary compensation for it? The days are fast passing when "reverend," "elder," "minister," "evangelist," "salvationist," etc., carry the weight with them that "reverend" did in years gone by. Neither do "professor," "doctor," "clairvoyant," "faith cure," "mind cure," carry the weight that "physician" did in those days. The truly reverend man that has shown by his life-work that he is a godly man, will justly be revered, and so also will the true physician be respected and trusted.

People should be made to understand that medical men are not obliged legally to respond to professional calls where their bills have not been paid for a long time, unless they are made sure of their pay. We are all imposed upon at times by people who say that they are poor, and need our services but have not the means to pay us. In such cases most of us give our services for a time, and then if we find we have been deceived, I presume most of us will treat the next case that comes, just the same, so as not to let any one really deserving be neglected by the wrong-doing of others. If there is a physician who can preserve his equanimity of mind under all the perplexities and trials to which he is subjected, he must be a man after God's own heart.

If we expect people to employ us, and, I may say, pay us, we must be willing to protect them in every possible way, by doing our part as good citizens, by attending to all professional calls as promptly as possible, by carefully keeping all professional secrets entrusted to us, by giving intelligent and conscientious treatment. We should try to protect people against the class of irresponsible and itinerant doctors, so-called, who are travelling about the country, though there is no doubt that we sometimes make more money by having these persons come into the State, as they leave a train of ills behind them that we are called upon to treat. We should see that the public is protected against contagious diseases. If people are willing to pay for being protected against the small-pox, why should they not pay for being protected against diphtheria and scarlet fever, from which diseases many more people die than from small-pox?

Country doctors often have great difficulty in getting good nurses, and they should therefore be very careful about giving directions so they will be understood, both in regard to medicine and diet. It is not necessary that patients should know everything they are taking. If they have not confidence enough in your judgment to take what you give, let them employ some one else.

The physician has a duty to perform to his family as well as to the community in which he lives, and that is, to care for them by collecting his bills from those who can pay, for it is his just due. From the honest poor, God's poor, turn not away under any circumstances, remembering that if you are not rewarded here, you will be hereafter.

THE ANNIVERSARY BANQUET,

was served at the New Eagle Hotel at one P. M., and was attended by nearly one hundred. Dr. Robert Burns of Plymouth presided, and the guests of honor were Governor Busiel, Drs. Foster and Douglas, of New York, and Drs. Morgan, Lee and Warren, representing the Maine, Vermont and Massachusetts Medical Societies.

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THE TREATMENT OF DIABETES.

Dr. Albert Robin, editor-in-chief of the *Bulletin de Thérapeutique*, affirms in late numbers of that journal that the essence of saccharine diabetes is "over-activity of nutrition in general, and of the hepatic cell in particular, dominated by a continuous nervous excitation, direct or reflex," and describes the "alternating treatment" of this disease as it is carried out by him.

He would begin by a week of dietetic regimen, in which the rigorous principles laid down by Bouchardat are enforced. Then a careful quantitative analysis of the urine is made, and the amount of sugar noted. In case the sugar has entirely disappeared, no medical treatment is instituted; the patient is directed not to vary for a long time from the prescribed diet *régime*.

Generally the glycosuria (along with the azoturia and polyuria) is only diminished, and the patient then begins the medicine of the "first stage," namely antipyrin, of which one gramme (fifteen grains) is given one hour before breakfast and dinner. His formula is as follows: antipyrin one gramme, bicarbonate of soda one-half gramme; to be taken in a little Vals water. This medicine is given only five days, and then suspended, as its continued use might cause the appearance of albumin in the urine. If the patient is albuminuric, the antipyrin is almost contraindicated, and the same may be said of cases of grave diabetes, where it does no good. Its action is almost *nil* in pancreatic diabetes. If the sugar does not diminish rapidly after four days of treatment by antipyrin, it is of no use to return to this medicament. If, however, during this first trial, there is a marked decrease in the sugar and in the polyuria, it is a sign that the medicine is proving beneficial.

The "adjuvants" of this first stage of treatment are cod-liver oil (one or two tablespoonfuls per day), alkalies and laxatives. The Rochelle salt, of which half an ounce may be given in the morning fasting, is one of the best purgatives, in the event of constipation.

On the fourth, or at the latest, the fifth day of the "alternant treatment," the antipyrin is suspended, and the patient begins on the medicines of the "second stage." These medicines are sulphate of quinine, arsenic, the alkalies and alkaline earths, and codeia. Quinine is believed to lessen organic destruction; arsenic "reduces the general oxidations and the nitrogenous mutations"; the alkalies "diminish the functional activity of the hepatic cells, the general activity of all the tissues, retard the formation of urea and uric acid, in a word, retard nutrition." Codeia possesses the general proporties of the opiates, "diminishing the total disassimilation, the nitrogenous disassimilation, the azotized oxidations and the nervous oxidations. In a word, it retards the nutritive mutations through its influence on the nervous system."

These medicaments are given in the following manner:

(1) Before the noon meal, a cachet of sulphate of quinine 0 gr. 40 (6 grains). Continue six days; cease four days; resume during six days.

(2) Before breakfast and dinner, a cachet, the composition of which is as follows:

Arseniate of soda	0.002 to 0.003
Carbonate of lithia	0.10 to 0.15
Codeia	0.02 to 0.04
Theriacal powder	0.25
Dried extract cinchona (pulv.) . . .	0.04

M. [The "theriacal powder" is peculiar to the French ph. and owes its properties principally to the small quantity of crude opium which it contains.]

The "adjuvants" of the second stage are the same as those of the first, cod-liver oil (given when it is well borne), wine of quinine, Rochelle salts (when there is constipation), and some sodic bicarbonated mineral water at meal-time.

After fifteen days, the medicines of the second stage are dropped, and the patient commences those of the third, namely, opium and belladonna, bromide of potassium, the alkalies and valerian, all being "moderators of the exchanges."

The opiates have long had repute in the treatment of diabetes. But they must not be given in large doses or during a long time, nor to patients threatened with acetonemia, nor to feeble diabetics becoming cachetic, or affected with grave renal complications. Opium does better when associated with belladonna. Valerian, under the form of the extract, has a powerful retarding effect on the nutritive exchanges, and lessens polyuria. Bromide of potassium "diminishes the elimination of earthy phosphates . . . and the mutations in the nervous system," but must not be given in large doses, because too depressing. Its use should be limited to "nervous subjects," and never in doses exceeding two or three grammes per diem for eight or ten days at the most.

The medicines of the "third stage" are associated as follows:

(1) For eight days administer the thebaic extract,[1] belladonna and extract of valerian, according to the following formula:

Extract of belladonna	0.005
Extract of opium (thebaic)	0.01
Extract of valerian	0.10
Powder of cinchona bark	q. s.

M. Fiat pil. una.

During the first and second days, a pill every six hours; the third and fourth days, a pill every four hours; the fifth and sixth days, a pill every three hours; the seventh and the eighth days, a pill every six hours.

(2) During this (third) period require the patient to drink during the day and at meals, boiled water containing to every litre eight grammes (two drachms) of bicarbonate of sodium.

(3) Discontinue the cod-liver oil; continue the cinchona wine at meal-times.

If the patients present a particular intolerance for the opium and belladonna, or if very nervous, substitute for the above-mentioned pills, bromide of potassium in the dose of one gramme (fifteen grains) every eight hours for three doses.

If there is still considerable sugar in the urine after the three stages are finished, the series is commenced over again. But whether the sugar disappears or not after this second series, there must now be a respite of at least a month from all medicinal treatment and reliance on diet alone. During the month of interruption, the patient, if still azoturic, may continue the use of the alkaline waters. If, however, the proportion of urea falls below the normal, the alkaline waters are stopped, and some ferruginous preparation given instead. If, during the treatment, the sugar totally disappears from the urine, the patient must still for a long time observe the same care about diet, abstaining from starches and from sweets. In general, in the most simple cases the return to an ordinary diet must be very gradual, demanding at least six months or a year.

Dr. Robin has tried this plan of treatment (which has taken several years in its elaboration) on 100 cases of true diabetes, that is, patients who were voiding at least 100 grammes of sugar in the twenty-four hours. Considerable and permanent amelioration (conditional on careful dieting and occasional resumptions of the treatment) has been noted in 33 of these patients; cures, "still problematical," 25 cases; definitive cures, 24 cases; result *nil*, or only temporary, 18 cases.

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THE MILITARY EFFECTIVENESS OF THE MODERN SMALL-BORE PROJECTILE.

In our editorial of August 15th on this subject, based on the investigations of Surgeon-Lieut. Jay Gould during the Chitral campaign, the conclusion arrived at as the result of his investigations was that the modern Lee-Metford rifle projectiles did little harm in comparison with the old-fashioned, heavy, leaden bullets, to the various tissues of the body. The editor of the *British Medical Journal* was led even to doubt the efficacy of a volley from these rifles in stopping a charge at short range. It will be doubtless remembered that owing to the custom of the natives of carrying off their dead from the field of action and burying them immediately, Lieutenant Gould was able to observe the effect of these missiles only in the slightly wounded. The fact that these cases did almost uniformly well, has apparently led to needless alarm on the part of the *British Medical Journal* lest the modern projectiles would prove ineffective in stopping charges of murderous natives upon the Queen's troops.

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[1] Extract of opium.

In the opening address before the Surgical Section of the British Medical Association, Sir William McCormac, basing his remarks on the careful and thorough experiments conducted by the German Kriegs-Ministerium on the effect of these projectiles propelled by full charges and at long and short range, comes to far different conclusions with regard to the value of the modern projectiles. At short range the shattering effect of the nickel-coated missiles upon the skull and long bones is terrific; "at 100 yards the entire vault of the skull is shattered, fissures extend from both entrance and exit wounds and a gaping line of fracture was constantly found extending between them." At ranges up to 600 yards the shattering of the long bones is extreme, and for ranges up to 2,000 yards the damage to the long bones is very great. The danger of primary hemorrhage from the wounds inflicted by the modern bullet is also greater, for the new projectile, instead of bruising an artery or pushing it aside, is apt to cut a piece clean out of the vessel wall, thus incompletely dividing it and preventing retraction, a condition of things which is obviously in the highest degree favorable to hemorrhage. The enormous effective range of the new projectiles and their penetrating power will also add materially to their liability to produce severe injuries, while, on the other hand, the fact of the impossibility of maintaining for any length of time a conflict at short range with such murderous weapons, will increase the distance between the lines of battle, a circumstance which will in the future tend to diminish the seriousness of the injuries produced.

In summing up his address, Sir William comes to the following apparently fair and judicious conclusions on the subject of the effect of modern projectiles upon future wars:

> It would appear probable that in a future war many of the wounds produced by the new projectile will be surgically less severe and prove amenable to effective surgical treatment. Probably also the number of severe injuries will be very great when we consider the enormous range of the new weapon and the penetrating power of the projectile, which enables it to traverse the bodies of two or three individuals in line, including bones, and to inflict serious or fatal wounds at a distance of 3,000 or 4,000 yards. It is impossible to say what the proportion between these two is likely to be. At near ranges the explosive effects will be much the same as before, but at long range the narrow bullet track, the small external wounds, which often approach the subcutaneous in character, and the moderate degree of comminution and fissuring of the bone will be surgically advantageous. These will form the bulk of the gunshot injuries of the future for it would seem impossible with magazine quick-firing rifles to maintain a contest at close quarters without speedy mutual annihilation.
>
> We may take it for granted that the number of wounded in proportion to the numbers engaged and actually under fire will be greater than before. The supply of ammunition will be larger, the facility for its discharge greater, and smokeless powder will increase accuracy of aim.
>
> I think we are justified in believing, although there is high authority for a contrary opinion, that the next great war will be more destructive to human life, "bloodier," in fact, than any of its predecessors, and that the number of injuries, and in many cases the severity of the injury, will be largely increased. But very many cases will remain less severe in character, more capable of successful treatment, and less likely to entail future disablement, while improved sanitation and antiseptic methods will enormously increase the proportion of recoveries.
>
> It is the unceasing effort of modern surgery to provide antiseptic protection in an effective form in time of war; and I may be permitted to recall that the medical organization during our last war in Egypt was so complete in this respect that not a single case of infective wound disease occurred during the whole campaign.
>
> As a temporary dressing some form of antiseptic occlusion will prove most generally applicable. The small wounds of entrance and exit render this plan comparatively easy of application, and the chances of septic infection will be diminished by the less frequent necessity for probing or searching for a lodged projectile, and indeed the ascertained presence of the bullet is no sufficient indication *per se* to attempt its removal. The eye rather than the hand is the best thing to employ at a first dressing station, as Fischer has well said.
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> If only asepticity can be ensured — and this is the great difficulty — we may expect a large measure of success to follow the treatment of wounds of the soft parts, many forms of fracture — notably also wounds of the joints, and very especially wounds of the lung.

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MEDICAL NOTES.

THE CHOLERA SITUATION IN RUSSIA AND CHINA. — Recent cable advices indicate that from very small beginnings in the Russian province of Volhynia, cholera has suddenly made an expanding break in several directions, notably to the south and west Various dispatches from Cracow, Lemberg, and other points show that it is spreading rapidly in Austrian Poland. Still more circumstantial stories come from southern Russia, where the epidemic has reached the vicinity of Kief, and even, it is rumored, the city itself There can be merely guesses as to the extent to which the disease prevails in China. In the dispatches there are occasional references to its existence in the Liao-Tong peninsula, and in the kingdom of Corea, and there is every reason to believe that it has been very destructive in these regions. From the trustworthy statistics that are kept by the Japanese authorities, it is learned that up to the close of July there had been 9,500 cases of the disease in Japan more than one-half of which had proved fatal

India has been remarkably free from this disease this year up to the present time.

New Mexico Adopts the Advanced Standard. — The New Mexico Territorial Board of Health at its meeting, June 19, 1895, adopted this standard for medical colleges: Examination will be required from all applicants to practise medicine in New Mexico who shall graduate after July 1, 1897, from any medical college not requiring preliminary examination of its matriculants, or equivalent evidence of satisfactory general education, and, for graduation, evidence of four years' study of medicine and four terms of lectures occurring in four separate years. Meanwhile, the present standard of three years' study, three terms of lectures in three separate years, and preliminary examination of matriculants will be maintained on all applicants who have graduated since July 1, 1890.

The Result of a Libel Suit in Australia. — Mr. C. B. Elliott, Government Medical Officer in Geraldton, West Australia, sued the Victorian Express Newspaper Company for libel. The libel was contained in the form of a letter, asserting that the large number of cripples in Geraldton was owing to the incompetence and neglect of the hospital medical officer, Mr. Elliott. After a trial which lasted eight days, the jury awarded Mr. Elliott £500 and costs, the editor being also sentenced to fourteen days' imprisonment for some contempt of court occurring during the trial. — *Medical Record.*

The First Chinese Woman Graduate.— The first Chinese woman graduate of an American medical college is Dr. Hu King Eng, who is now on her way to her native land, where she expects to practise her profession. She received her doctor's degree a year ago in Philadelphia, at the Woman's Medical College, and has taken a year's post-graduate course at the University of Pennsylvania. The success of women physicians in India is well known; there can be little doubt that there is a still wider field in more benighted China.

Persistence Rewarded.— Miss Bogolubska, of Merchinsk, a mining village in East Siberia, is a lady of great determination, who deserves the thanks of her sisters in other lands. She was one of a number of Russian women who had sought in foreign countries the advantages of a medical education denied them in their own land. After obtaining her degree from the University of Berne she returned to her native village, and, not being allowed to practise medicine, worked for eight years as a nurse. She was specially allowed by the authorities, however, to labor among the peasants who were stricken down in the cholera outbreak of 1892. This year she returned to St. Petersburg, where she obtained permission from the Czar to take a Russian degree, which confers the right of practising in any part of the empire. This privilege is now to be extended among her countrywomen generally, and the Woman's Medical School in St. Petersburg, which was closed for political reasons in 1887, is soon to be reopened.— *Medical Record.*

NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, August 28, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 75, scarlet fever 41, measles 2, typhoid fever 48.

The Ambulance Service at the Knights-Templar Parade. — The headquarters of the Auxiliary Militia Ambulance Corps for service at the Knights-Templar parade were on Clarendon Street, near Boylston. There were 30 men in the corps on duty, under the efficient command of Captain Myles Standish, M.D. Excellent service was performed in the case of the accidents which were fortunately mostly of a minor nature. The eight cot-beds were occupied during the day chiefly by ladies who had succumbed to the heat while watching the procession. The only serious casualty connected with the procession was the unfortunate death from "apoplexy" of a Sir Knight from Palestine Commandery, of Connecticut.

Opening of the Boston City Hospital's Department for Contagious Disease.—On Monday, August 26th, by invitation of the trustees of the Boston City Hospital, Mayor Curtis and the members of the City Council visited and inspected the wards and hospital buildings of the new south department on Massachusetts Avenue. On Wednesday, August 28th, the physicians of Boston visited the new institution by invitation of the trustees. On Friday a reception will be given to those of the general public who are especially interested in hospital matters.

The New Department of the Boston City Hospital.— At the reception tendered the City Government at the new department of the City Hospital, that for Contagious Diseases, President Shuman gave the following sketch of the buildings and history of their construction:

"These buildings were begun in December, 1892, and are shown for your inspection to-day, ready for occupancy with their accommodations for 210 patients, which can, if necessary, be extended to 250. We feel that the city of Boston has just reason to be proud of the new hospital department which opens to-day. The buildings were planned and constructed after careful consultation not only with our own staff and Superintendent Rowe, but with the most eminent authorities on hospital construction in the country, including City Architect Wheelwright, who designed the plans and succeeded most admirably in carrying them out.

"The trustees have pursued what they believe to be a wise policy; namely, that the buildings should be thoroughly constructed, fire-proof and of materials suitable for the treatment of infectious diseases; that is to say, that the walls, floors, furniture and furnishings should be such as science teaches us are the best applicable for that purpose. The expense of such a hospital is much larger than that of a hospital devoted to the treatment of general medical and surgical cases.

"The trustees and medical staff confidently believe that there is no hospital, not only in this country but in the world, better adapted in general ways and in many details, for the treatment of infectious diseases, than the South Department of the Boston City Hospital.

"Without exception the opinion has been expressed that no other city has a hospital for infectious diseases equal to ours or that in any way approaches it. The trustees believe that this hospital will be taken as a standard from which other hospitals devoted to infectious diseases will be constructed, and not only congratulate your honor and the members of the city council but the citizens of Boston generally in the fact of this possession.

"I also mention the fact that another important group of buildings has been added to the hospital, consisting of a scientific laboratory, mortuary and mortuary chapel. The chapel affords an opportunity which has never before been possessed of having funeral services of patients of any nationality or creed, conducted in a fitting manner.

"Next to the new South Department, the trustees take especial pride in the scientific laboratory. There is already a pathological staff of seven physicians whose work in the hospital is exclusively in these laboratories, not counting the 30 house doctors who will do special work. There is no other hospital, outside of a medical college, which contains such appropriate and well equipped laboratories for scientific medicine as our own hospital."

With regard to the new buildings now under construction for the Surgical Department, President Shuman said:

"There are also under construction, two other buildings, — one the enlargement of the surgical operating-building, and the other a two-storied ward for surgical patients. The plans and details of the new surgical buildings have been seen by eminent surgeons in America, and they have been pronounced unique, and without a superior. They will add a capacity of 60 more beds for the treatment of surgical cases. Although we have 260 beds for surgical cases, the emergencies and accident cases have been so large that at times no cases other than injuries have been admitted, solely on account of room.

"Ten years ago the capacity of the hospital was 420 beds, while now, when the new surgical wards are completed, the total capacity will be 832 beds, or double what it was in 1885.

"Right here, I desire on behalf of the trustees, to call the attention of your honor and the city council to the urgent necessity for the completion of the hospital plan by taking by right of eminent domain, the houses on Massachusetts Avenue, and adding them to the present Nurses' Home, as some of the nurses are now occupying beds in the hospital that are sorely needed for patients, besides which, 31 nurses are obliged to room outside."

NEW YORK.

A Medical Martyr of the Last Century.— The *Herald* recently published some of the inscriptions on the tombstones in the old Jewish burying-ground in New Bowery, and among them is the following: "To the Memory of Walter J. Judah, Student of Physic, who, worn down by his exertions to alleviate the sufferings of his fellow-citizens in the dreadful contagion that visited the City of New York in 1798, fell a victim in the cause of humanity the 5th of Tishri, A. M. 5559 (September 15, 1798), aged 20 years, 5 months, 11 days." The quaint sculpture on the head of the stone represents the Angel of Death waving his sword over the city, and an inscription in Hebrew gives a more extended tribute to the worth of the devoted youth.

Miscellany.

FAITH-HEALING OR SUICIDE.[1]

An inquest was recently held upon the body of a girl aged seventeen, who died in Brixton of acute tuberculosis and peritonitis from a perforating gastric ulcer, having been very ill since last Easter. She had no medical advice because, according to the evidence of the woman in whose house she had stayed, "she trusted in the Lord to heal her without medical aid." It is useless to point out to people of this cast of mind the falsity of their theological reasoning, but we do think that the legislature, which takes care to prevent people jumping off the monument or going on to ice too thin to bear their weight, might step in and prevent peculiar people and faith-healers from murdering their children by neglect. We should be the last to deny the power of faith, but, as a recognized authority says, "faith without works is dead," and it is a canon of theology that the Almighty works by means, and those means humanity is bound to use. The *New Science Review* for July contains an article entitled "Has Mental Healing any Scientific Basis?" We do not quite understand this question, but we gather from the article that help need not always come from without, but there is a broad field for "auto-suggestion and systematic concentration with happy results." The ways and means to become properly auto-suggestive is as follows: You say mentally to yourself — even mechanically at first — until the habit is formed, "I [the real ego] am well. I am strong. I am pure. I am perfect. I am one with the Divine Spirit of Wholeness." The next step is, "To ensure progress special times and seasons should be set apart for focalized thought and affirmation. . . . At times when the objective world, with all its cares and anxieties, may conveniently be barred out, the full glare of the consciousness is turned upon the divine ideal within, which thereby gradually becomes graphic and ruling." It is evidently quite easy to become a mental healer, but we seem to remember that this process is not new. There was once a sect in the Eastern Church called the Ομφαλοψύχοι, who by steadily gazing at their navels were at length rewarded with a sight of the light (created or uncreated) which shone at the Transfiguration. This method, we suppose, is what Mr. Henry Wood, the writer of the article in question, calls "keeping company with his inner ideal." However, he does not seem to have much faith in the process he recommends, for he concludes: "As related to illnesses, prevention is the end to be sought, so that in time cures may be unnecessary." If any one by "keeping company with his inner ideal" can cure a gastric ulcer he would be a most valuable addition to our present therapeutic agents.

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[1] The Lancet.

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Correspondence.

SUBSCRIPTIONS TO THE *INDEX MEDICUS*.

Washington, D. C., August 22, 1895.

Mr. Editor: — I enclose herewith a list of subscriptions to the *Index Medicus*, in accordance with the accompanying form, which I have thus far received. This is exclusive of subscriptions sent to Mr. George S. Davis, the former publisher of the *Index Medicus*. When the physicians return from their summer vacation I hope that this list will be largely added to.

Very truly yours, J. S. Billings, M.D.

Form for Subscription.

The undersigned hereby agrees to subscribe for one copy of the *Index Medicus* for .. . year.. at $25.00 per year, subject to the following condition, namely, when 200 subscriptions have been received by the editors, the publication is to commence, and on notification of this I will send twenty-five dollars to them. If, by December 1, 1895, the 200 subscriptions have not been obtained, the attempt to revive the publication will be abandoned.

Address,.... ....

Address of Editors: Dr. J. S. Billings, Dr. Robert Fletcher,
Library of the Surgeon-General's Office, Washington, D. C.

List of Subscriptions for the "Index Medicus" received by Dr. Billings to August 21, 1895.

Albany, N. Y.: Dr. A. Vander Veer.
Baltimore, Md.: Dr. William Osler, Dr. H. A. Kelly, Dr. L. McLane Tiffany, Dr. I. E. Atkinson, Dr. W. S. Halsted, Dr. Henry M. Hurd.
Brooklyn, N. Y.: Medical Society, County of Kings.
Cincinnati, O.: Dr. P. S. Conner, Dr. F. Forchheimer, Cincinnati Hospital Library.
Denver, Col.: Colorado Medical Library Association.
Galveston, Tex.: Dr. J. P. Johnson.
London, Eng.: Royal College of Surgeons, England.
New Orleans, La.: Dr. S. E. Chaillé, Dr. John B. Elliot, Dr. Edmond Souchon, Dr. Rudolph Matas.
New York City, N. Y.: Dr. G. T. Jackson, Dr. J. S. Thacher, Dr. John A. Fordyce.
Ogdensburg, N. Y.: St. Lawrence State Hospital.
Philadelphia, Pa.: Dr. J. C. Wilson, Dr. Wm. Pepper, Dr. De Forest Willard, Dr. S. Weir Mitchell, Dr. Geo. M. Gould, Dr. H. C. Wood.
Quincy, Ill.: Quincy Public Library.
Richmond, Va.: Dr. Hunter McGuire.
Rochester, N. Y.: Dr. John O. Roe.
Salt Lake City, Utah: Dr. S. H. Pinkerton.
Saranac Lake, N. Y.: Dr. E. L. Trudeau.
Washington, D.C.: Medical Department, U. S. Army, 10 copies, Library Surgeon-General's Office, 2 copies, Medical Department, U. S. Navy, 2 copies, U. S. Marine-Hospital Service, 1 copy.

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AN IMPORTANT EARLY SIGN OF TABES.

Boston, August 24, 1895.

Mr. Editor: — A number of years ago, while trying the effect of hyperflexion of the legs for relief of pain in tabes, I observed that it was frequently possible to flex the leg at the hip, without bending it at the knee, so far that it would almost touch the ear without exciting the painful sense of popliteal tension which is so speedily felt by a person in health.

Since then I have once seen a brief reference to this fact, but I have never seen the sign described in the text-books nor commented on at any length.

I have, however, convinced myself that it is not only an interesting feature of advanced cases of the disease, but that it may help one out at an early stage where the diagnosis is doubtful. I have recently seen a gentleman who presents no other signs of tabes beyond the presence of characteristic pains which have followed him for the past three years. The knee-jerks are both present, though one is less well marked than the other, and the same may be said of the reactions of the pupils to light. The patient has been seen by an eminent physician of New York who assured him that he had not tabes, and although I thought myself that the diagnosis could be made with confidence, yet I felt strengthened in this opinion by the presence of the sign referred to.

So far as I can now judge, the degree to which the hyperflexion is possible without exciting pain is proportionate rather to the pain than to any other symptom, and is not proportionate to the ataxia. The sign is certainly one which deserves study, though it is not invariably present.

Yours truly,

James J. Putnam, M.D.

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THE UTAH BOARD OF MEDICAL EXAMINERS REVOKE A LICENSE FOR UNPROFESSIONAL AND DISHONORABLE CONDUCT.

Salt Lake City, Utah, August 10, 1895.

Mr Editor: — At the July quarterly meeting of the Utah Board of Medical Examiners, a recent graduate of the Missouri Medical College, Dr. Robert W. Renwick, appeared before the Board for license to practise medicine in the Territory, and passed the required examination. Immediately thereafter he billed the town, alleging the wonderful and extraordinary powers of two human magnets, by free lectures and other advertisements.

At once the Board served notice upon Dr. Renwick to appear before them and show cause why his license should not be revoked for unprofessional and dishonorable conduct. The other parties to the fraud were arrested for practising without a license; they pleaded that they were only in the employ of Dr. Renwick, a licensed physician, which Renwick substantiated to the satisfaction of the court, and proposed to shield the party by the license of the said Board.

After resorting to all the strategy possible to gain time in the courts, it was brought to trial, and the license promptly revoked by the Board. The result is that Renwick & Co. moved on to Nevada and California.

The Supreme Court of the Territory has affirmed the validity of the Utah Medical Bill, and the powers of the Board to decline, revoke or withhold licenses to practise medicine, for cause; and the court further says, it is absurd to expect the judiciary to be the judge of respectable medical colleges of good standing, or of unprofessional conduct. Such powers rightfully belong to the Board of Medical Examiners.

It is thus seen that the Utah Medical Board are ready to uphold the honor of the profession without fear or favor. The Board consists of seven physicians — four regular, two homeopathic, and one eclectic. The requirements are second to none in the country, and are most rigidly carried out, as is seen by the large number of applicants refused licenses at each examination. At a recent examination only two candidates were successful out of ten applicants.

We heartily congratulate the Utah Board on their prompt discharge of a duty which, although disagreeable, is yet necessary for the good of the public and the profession.

Yours truly, P.

METEOROLOGICAL RECORD,

For the week ending August 17th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..11	29.89	72	79	64	46	61	54	N.	S.E.	3	9	C.	F.	
M..12	29.81	68	73	63	92	90	91	S.E.	N.E.	11	5	R.	O.	.40
T ..13	29.88	68	73	62	96	92	94	S.E.	E.	4	4	O.	O.	
W..14	29.98	70	79	62	59	76	68	N.	S.	5	7	C.	C.	
T ..15	30.04	74	82	66	49	73	61	N.	S.W.	3	9	F.	C.	
F..16	30.10	72	76	69	65	53	59	N.E.	S.	7	9	C.	C.	
S...17	29.99	72	80	64	84	86	85	S.E.	S.	4	12	C.	O.	
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* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, August 17, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,956,000	916	446	28.82	8.80	20.02	.99	3.41
Chicago . . .	1,600,000	—	—	—	—	—	—	—
Philadelphia .	1,139,457	558	175	25.20	10.26	15.84	2.88	2.70
Brooklyn . .	1,043,000	520	274	28.12	8.36	20.52	.76	3.80
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	254	140	25.74	6.24	20.28	1.56	2.73
Baltimore . .	500,000	—	—	—	—	—	—	—
Cincinnati . .	325,000	—	—	—	—	—	—	—
Cleveland . .	325,000	89	49	32.48	4.48	30.24	1.12	—
Washington .	285,000	135	62	25.16	5.92	11.76	5.18	.74
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	36	12	22.24	8.34	11.12	2.78	—
Charleston . .	65,165	41	15	19.52	4.88	14.64	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	33	19	33.33	12.12	24.24	—	—
Fall River . .	92,233	42	26	45.22	—	38.08	4.76	—
Lowell . . .	90,613	—	—	—	—	—	—	—
Cambridge . .	79,607	32	18	34.34	—	21.91	—	9.39
Lynn	65,123	22	11	22.75	9.10	13.65	4.55	—
Springfield . .	50,284	—	—	—	—	—	—	—
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	21	11	38.84	14.28	38.08	4.76	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	8	0	25.00	12.50	25.00	—	—
Salem	33,155	20	7	40.00	10.00	40.00	—	—
Haverhill . .	32,925	9	6	11.11	11.11	11.11	—	—
Malden . . .	30,209	7	5	14.28	42.84	—	—	—
Chelsea . . .	29,806	18	10	22.22	—	—	—	11.11
Fitchburg . .	29,343	14	11	57.12	—	42.84	7.14	—
Newton . . .	28,837	10	4	10.00	10.00	10.00	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,954	16	11	—	—	—	—	—
Waltham . .	22,058	6	3	33.33	—	33.33	—	—
Quincy . . .	19,642	—	—	—	—	—	—	—
Pittsfield . .	18,802	6	5	66.66	—	66.66	—	—
Everett . . .	16,585	7	5	42.84	—	14.28	—	28.56
Northampton .	16,331	7	5	42.84	—	42.84	—	—
Newburyport .	14,073	6	2	50.00	16.66	16.66	16.66	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,995; under five years of age 1,385; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 825, consumption 243, acute lung diseases 186, diarrheal diseases 600, diphtheria and croup 82, typhoid fever 50, whooping-cough 39, measles 20, cerebro-spinal meningitis 17, scarlet fever 10, malarial fever 9, erysipelas 5, small-pox 3.

From whooping-cough New York 19, Brooklyn 8, Philadelphia 7, Nashville 2, Cleveland, Providence and Newburyport 1 each. From measles New York 10, Philadelphia 8, Brooklyn 2. From cerebro spinal meningitis New York 5, Worcester 3, Washington and Chelsea 2 each, Philadelphia, Fall River, Lynn, Somerville and Fitchburg 1 each. From scarlet fever Boston 3, New York 2, Philadelphia, Providence, Cambridge, Malden and Woburn 1 each. From malarial fever Brooklyn 5, Charleston 2, New York and Nashville 1 each. From small-pox Philadelphia 3.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 24, 1895.

S. H. Dickson, surgeon, detached from the Medical Examining Board to temporary duty in Bureau of Medicine and Surgery.

H. T. Percy, passed assistant surgeon, detached from the Washington Navy Yard to duty as member of Medical Examining Board, Washington.

C. P. Bagg, assistant surgeon, detached from the "Monterey" and granted two months' leave.

H. D. Wilson, assistant surgeon, on arrival of "Monongahela" at Annapolis, detached from that vessel and ordered to temporary duty at the Washington Navy Yard.

APPOINTMENT.

Dr. Abner Post has been appointed visiting surgeon to the Long Island Almshouse and Hospital.

RECENT DEATH.

Dr. Kurt Schimmelbusch, Privat-Docent in surgery at the University of Berlin, died on August 1st, of embolism of the lungs following a thrombosis of the left iliac vein. He was only thirty-five years of age, but owing to his original work in surgery and pathology had won for himself a high place as a scientific investigator. His researches on coagulation of blood and thrombosis carried on in conjunction with Eberth, and his later important work on the aseptic treatment of wounds are especially well known. He was for many years assistant at Billroth's clinic.

BOOKS AND PAMPHLETS RECEIVED.

Hæmatoblasts and Blood Platelets. By Dr. M. L. Holbrook, of New York. Reprint. 1894.

Credulity and Skepticism in Modern Medicine. By George Henry Fox, M.D., New York. 1895.

Transactions of the Medical Society of the State of California, Session of 1895. San Francisco: Printed by the State. 1895.

Epithelial Changes Produced by Irritation. By D'Arcy Power, M.A., M.B. (Oxon.). F.R.C.S. (Eng.). Reprint. 1894.

Modern Medicine and Homœopathy. By John B. Roberts, A.M., M.D. Philadelphia: The Edwards & Docker Co. 1895.

On Movable Kidney. Imperforation of the Rectum. By George Ben. Johnston, M.D., Richmond, Va. Reprints. 1895.

The Medical Library for the Medical School or the Small Community. By Bayard Holmes, B.S., M.D., Chicago. Reprint. 1895.

Washington University, Medical Department, The St. Louis Medical College, Fifty-fourth Annual Announcement 1895–96, and Catalogue for 1894–95.

Washington University, Dental Department, Thirtieth Annual Announcement and Catalogue of the Missouri Dental College, St. Louis, Session of 1895–96.

Verlässliche Methode der arzneilosen Behandlung der chronischen Obstipation. Von Dr. J. Schreiber, kaiserlicher Rath, Aussee-Meran. Wien und Leipzig, 1895.

Address on the Founding of the Illinois Hospital. The Dilator in Diseases of the Air Passages and the Ear. By Seth Scott Bishop, M.D., of Chicago. Reprints. 1895.

A Report of the Abdominal Sections in the Gynecological Department of Mercy Hospital from July 1 to October 1, 1894. By Hubert A. Royster, M.D., Resident Physician, Pittsburgh, Pa. Reprint. 1894.

The Operative Treatment of Fistula in Ano. The Treatment of Anal Fissure, or Irritable Ulcer of the Rectum. The Treatment of Fistulæ in Ano by Lange's Method of Immediate Suture of the Tract. Extirpation and Colotomy in Cases of Carcinoma of the Rectum. By Lewis H. Adler, Jr., M.D. Reprints. 1892–93–95.

Abdominal Section in Ectopic Gestation where the Fetus is Living and Viable, with Report of a Successful Case. A Case of Didelphic Uterus with Lateral Hematocolpos, Hematometra and Hematosalpinx, with some Remarks on the Treatment of these Conditions. The Treatment of Chronic Endometritis. By X. O. Werder, M.D., Pittsburg, Pa. Reprints. 1894–95.

The Pocket Materia Medica and Therapeutics, a *Résumé* of the Action and Doses of all Officinal and Non-Officinal Drugs now in Common Use. By C. Henri Leonard, A.M., M.D., Professor of the Medical and Surgical Diseases of Women and Clinical Gynecology, Detroit College of Medicine; Member of the American Medical Association, etc. Second edition, revised and enlarged. Detroit: The Illustrated Medical Journal Co. 1895.

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INDEX TO ADVERTISEMENTS.

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Albany Medical College	
Anheuser-Busch Brewing Association	
Antikamnia Chemical Company	Antikamnia
Armour & Co	The Armour Laboratory
Baker, L. W., M.D	Riverview
Baker, Dr. W. H	Card
Bartlett, Dr. B. W	Card
Battle & Co.	Bromidia
Bellevue Hosp. Med. Col.	Sessions of '94-95
B. H. R. Distilling Co	
Bowdoin College	Medical Department
Bowker, Dr. E. M	Vaccine Virus
Boylston Medical Prize Questions	
Breitenbach Co., M. J	Pepto-Mangan
Channing, Dr. Walter	
Chauncy Hall School	
Cocke, Dr. James R	
Codman & Shurtleff	Surgical Instruments
Coll. of Physicians and Surgeons, Boston	
Coll. Physicians and Surgeons, Baltimore,	
Columbian University	
Crittenton, C. N	Vinolia Soap
Cutter, Dr. W. P	
Dadirrian, Dr	Matzoon
Dartmouth College, N. H	Med. Department
Doliber-Goodale Co	Mellin's Food
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Evans & Sons	Sandal Capsules
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Feeble-Minded Youth, Inst. for	Barre, Mass.
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Fellows, James I.	Hypophosphites
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Flood, Dr. Everett	
For Sale	
Fougera, E. & Co	Imp'g Pharmacists 9,
Gear, J. Frank	Surgical Instruments
Goldthwaite, Dr. S. V	
Goode, T. F	Buffalo Lithia Water
Gould's Medical Dictionary	
Graham, Dr. Douglas	Treatise on Massage
Greene, Dr. E. M	Examinations of Sputa
Harvard University	Dental Department
Harvard University	Medical Department
Improved Movement Cure Institute	
Jefferson Medical College	
Kingsbury, Dr. A. D	Card
Leedom, Charles	Nuclein Solution
Lehn & Fink	Mfg. Chemists
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Long Island College Hospital	
Mackie, Dr. L. V. G.	Sanitarium
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Marks, A. A	Artificial Limbs
Martin, Dr. F. C	Vaccine Virus
McElroy, P. J	Glass Syringes
Medico-Chirurgical College	
Norton, Dr. Eben C	Card
N. Y. Polyclinic and Hospital	
N. Y. Post-Graduate School and Hospital	
Oakland Chemical Co	Hydrogen Dioxide
Patch, E. L. Co	Lithia Tablets
Peake & Buzzell	Surgeons' Supplies
Pinaud, Ed	Sels Romains
Practice For Sale	
Purdue Frederick Co., The	
Reed & Carnrick	Protonuclein
Ring, Dr. Allan Mott	Nervous Diseases
Russell, Dr. F. W	Card
Schieffelin & Co	Mfg. Chemists
Schulze-Berge & Koechl	Migranin, etc. 11,
Seeley, I. B. & Co	Hard Rubber Trusses
Sharp & Dohme	Mfg. Chemists
Stedman, Dr. Henry R	Card
Tanner, E. S	Publisher
Thayer, Henry & Co	
Theodore Metcalf Co	Coca
Tufts College	
Twitchell, Dr. George B	Card
Tyree, J. S.	Antiseptic Powder
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Walnut Lodge Hospital	
Waterman, Dr. Thomas	Animal Vaccine Virus
Weeks & Potter Co.	Quinona
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Wheeler, Dr. T. B	Phosphates
White, Dr. Walter H	Card
Willard, Dr. A. J	Card
Woman's Hospital, Lowell	
Woman's Medical College, Baltimore	
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Summer Courses of Instruction, 1895.

Subject.	Instructor.	Place.	No. of Exercises	Begins.	Ends.	Days.	Hour.	Fee.
Anatomy of the Brain	Dr. Dexter	Medical School	12	July 1	July 26	Mo. We. Fr.	10	$20.00
Anatomy of the Ear[1]	Dr. Bryant	Medical School	13	Aug. 2	Aug. 30	Mo. We. Fr.	2	20.00
Histology and Microscopy[2]	Dr. Ames	Medical School	18	July 15	Aug. 16	Mo. We. Fr.	3	20.00
Clinical Microscopy[1]	Dr. Whitney	Mass. General Hospital	17	June 1	June 29	Tu. We. Fr. Sat.	11.30	15.00
Clinical Microscopy	Dr. Whitney	Mass. General Hospital	18	July 1	July 31	Tu. We. Fr. Sat.	11.30	15.00
Clinical Microscopy	Dr. Whitney	Mass. General Hospital	16	Sept. 3	Sept. 28	Tu We. Fr. Sat.	11.30	15.00
Chemistry[3,4]	Dr. Hills	Medical School	30	June 24	July 27	Daily	10	30.00
Medical Chemistry[4,5]	Dr. Ogden	Medical School	30	July 1	Aug. 3	Daily	1	30 00
Pathological Anatomy[6]	Dr. Taylor	Medical School	14	July 1	July 31	Mo. We. Fr.	3	20 00
Pathology of Infectious Diseases[1]	Dr. Wright	Medical School	27	June 20	July 20	Daily	2	25.00
Clinical Medicine	Dr. Gannett	Mass. General Hospital	21	July 1	Aug. 16	Mo. We. Fr.	9	20.00
Clinical Medicine	Dr. Gannett	Mass. General Hospital	19	Aug. 19	Sept. 30	Mo. We. Fr.	9	20.00
Clinical Medicine	Dr. Withington	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10.30	15.00
Clinical Medicine[1,7]	Dr. Vickery	Mass. General Hospital	12	June 3	June 28	Mo. We. Fr.	10	15.00
Clinical Medicine	Dr. Bowditch	City Hospital	16	June 4	July 26	Tu. Fr.	10	20 00
Orthopedic Surgery	Dr. Bradford	Children's Hospital	18	July 1	Aug. 28	Mo. We.	4	20.00
Clinical and Operative Surgery	Dr. Mixter	Mass. General Hospital	25	June 4	July 30	Tu. Th. Sat.	11	25.00
Clinical and Operative Surgery	Dr. Mixter	Mass. General Hospital	25	Aug. 1	Sept. 26	Tu. Th. Sat.	11	25.00
Clinical and Operative Surgery[1]	Dr. Monks	City Hospital	13	Aug. 2	Aug. 30	Mo. We. Fr.	10	20.00
Clinical and Operative Surgery[1]	Dr. Monks	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10	20.00
Genito-Urinary Surgery	Dr. Watson	City Hospital	13	June 1	June 29	Tu. Th Sat.	11	20.00
Clinical and Operative Surgery[1]	Dr. Conant	Carney Hospital	20	July 3	Aug. 16	Mo. We. Fr.	10	25.00
Clinical and Operative Surgery[1]	Dr. Conant	Carney Hospital	19	Aug. 19	Sept. 30	Mo. We. Fr.	10	25.00
Clinical and Abdominal Surgery[1]	Dr. Conant	Charity Hospital	13	June 6	July 30	Tu. Th.	10	25 00
Clinical and Abdominal Surgery[1]	Dr. Conant	Charity Hospital	17	Aug. 1	Sept. 26	Tu. Th.	10	25.00
Intubation of the Larynx[1,8,14]	Dr. Scudder	Medical School	3	July	Aug.			10.00
Surg. Apparatus and Bandaging[1,9,14]	Dr. Scudder	Medical School	10	July 8	July 18	Daily		15.00
Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	13	July 2	July 30	Tu. Th. Sat.	10	20.00
Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	13	Aug. 2	Aug. 30	Mo We. Fr.	10	20.00
Minor Surgery	Dr. C. A. Porter	Mass. General Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	20.00
Minor Surgery	Dr. Brooks	Mass. General Hospital	14	July 1	July 31	Mo. We. Fr.	10	15.00
Minor Surgery	Dr. Brooks	Mass. General Hospital	14	Aug. 1	Aug. 31	Mo. Th. Sat.	10	15.00
Minor Surgery	Dr. Brooks	Mass. General Hospital	13	Sept. 2	Sept. 30	Mon. We. Fr.	10	15.00
Clinical Obstetrics	Dr. Green	Lying-in Hospital	45	June 1	July 31			30.00
Clinical Obstetrics	Dr. Green	Lying-in Hospital	45	Aug. 1	Sept. 30			30.00
Clinical Obstetrics[1]	Dr. Townsend	Lying-in Hospital	8	Sept. 2	Sept. 27	Mo. Fr.	12	15.00
Clinical Obstetrics[1]	Dr. Haven	Lying-in Hospital	9	July 1	July 29	Mo. Fr.	11	15.00
Operative Obstetrics	Dr. Haven	Medical School	11	July 8	July 19	Daily	4	20.00
Diseases of Children[10]	Dr. Buckingham	Children's Hospital	18	June 1	July 30	Mo. Th. Sat.	10	20.00
Diseases of Children[11]	Dr. Wentworth	Children's Hospital	18	Aug. 1	Sept. 28	Daily	10	20.00
Diseases of the Ear	Dr. Blake	Eye and Ear Infirmary	12	Sept. 3	Sept. 28	Tu. Th. Sat.	9	12.00
Diseases of the Eye[1]	Dr. Standish	Eye and Ear Infirmary	13	July 2	July 30	Tu. Th. Sat.	10	20.00
Diseases of the Eye	Dr. Cheney	Eye and Ear Infirmary	22	June 12	July 31	Mo. We. Fr.	9	20.00
Diseases of the Larynx	Dr. Farlow	City Hospital	13	June 3	July 12	Mo. We. Fr.	10	20.00
Diseases of the Nervous System	Dr. Walton	Mass. General Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	20.00
Diseases of the Skin	Dr. Bowen	Mass. General Hospital	20	July 2	Aug. 15	Tu. Th. Fr.	10	20.00
Diseases of the Skin	Dr. Bowen	Mass. General Hospital	20	Aug. 15	Sept. 27	Tu. Th. Fr.	10	20.00
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Diseases of Women	Dr. Washburn	Women's Free Hospital	12	July 1	Aug. 8	Mo. Th.	3.30	20.00
Diseases of Women	Dr. Washburn	Women's Free Hospital	12	Aug. 12	Sept. 19	Mo. Th.	3.30	20.00
Diseases of Women[1,12]	Dr. Burrage	St. Elizabeth's Hospital	13	June 3	July 15	Mo. Th.	10	25.00
Diseases of Women[1,13]	Dr. Burrage	St. Elizabeth's Hospital	13	July 18	Aug. 29	Mo. Th.	10	25.00
Bacteriology[1]	Dr. Ernst	Medical School	36	July 1	Aug. 10	Daily	3	30.00
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Municipal Sanitation	Dr. Durgin	Medical School	14	July 1	July 31	Mo. We. Fr.	3	20.00
Practical Therapeutics[1]	Dr. Tenney	Boston Dispensary	20	July 8	Aug. 21	Mo. We. Fr.	10	20.00
Clinical Pathology	Dr. E. W. Dwight	City Hospital	14	Aug. 1	Aug. 31	Tu. Th. Sat.	10	15.00
Clinical Pathology	Dr. E. W. Dwight	City Hospital	12	Sept. 3	Sept. 28	Tu. Th. Sat.	10	15.00
Clinical and Abdominal Surgery	Dr. Elliot	Mass. General Hospital	21	June 3	July 19	Mo. We. Fr.	11	15.00
Clinical Surgery	Dr. F. B. Harrington	Mass. General Hospital	18	July 2	Aug. 30	Tu. Fr.	11	20.00
Surgery of Children[1]	Dr. Lovett	Children's Hospital	13	Aug. 17	Oct. 1	Tu. Sat.	4	20.00
Genito-Urinary Surgery[1]	Dr. Thorndike	City Hospital	13	Aug. 2	Aug. 30	Mo. We. Fr.	10	20.00
Genito-Urinary Surgery[1]	Dr. Thorndike	City Hospital	13	Sept. 2	Sept. 30	Mo. We. Fr.	10	20.00
Practical Pharmacy[5]	Dr. C. Harrington and Mr. Jordan	Medical School	12	July 1	July 26	Mo. We. Fr.	4	20.00
Practical Pharmacy[5]		Medical School	12	July 29	Aug. 23	Mo. We. Fr.	4	20.00
Pathological Histology[14]	Dr. Mallory	Medical School	25	July	Aug.			20.00
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[1] Class-membership limited.

[2] A small charge will be made for laboratory supplies.

[3] A satisfactory examination passed at the end of this course will be accepted in place of the admission examination in Chemistry.

[4] A deposit of five dollars will be required to meet charges for supplies and broken apparatus.

[5] Each exercise is of two hours' duration.

[6] Of the nervous system only.

[7] Men and Children only.

[8] Practice on cadaver.

[9] Fractures and dislocations especially included.

[10] A course will be of six weeks' duration and the class may be joined at any time before June 20th.

[11] A course comprises eighteen exercises and the class may be joined at any time before August 19th.

[12] Minor Gynecology.

[13] Operative Gynecology.

[14] Time of exercises to be arranged later.

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PAGE

LECTURE.

METRITIS AS A CAUSE OF MISCARRIAGE. *By Charles Greene Cumston, B.M.S., M.D.*, Instructor in Clinical Gynecology, Faculty of Medicine, Tufts College; Member of the Société Française d'Electrothérapie; etc. Lecture II. 225

ORIGINAL ARTICLES.

THE ETIOLOGY OF DIPHTHERIA AND THE USE OF ANTITOXIN. *By Harold C. Ernst, M.D.*, Boston 228
THE PATHOLOGY OF DIPHTHERIA. *By William T. Councilman, M.D.*, Boston 231
THE PREPARATION OF DIPHTHERIA ANTITOXIN. *By Joseph L. Goodale, M.D.*, Boston .. 235
DIPHTHERIA AND THE ANTITOXIN TREATMENT. *By W. F. Robie, A.B., M.D.*, Baldwinville, Mass. 238

MEDICAL PROGRESS.

REPORT ON CHEMISTRY. *By William B. Hills, M.D.* 241
Albuminuria. — Peptonuria. — Nucleo-Albumin. — Urinary Pigments. — Alcaptonuria. — Carbohydrates of Normal Urine. — Detection of Small Quantities of Sugar in the Urine. — Detection of Bile-Pigment in Urine. — Rare Urinary Calculi. — Alkaloids. — Carbonic-Oxide Poisoning. — Chloroform. — Action of Definitely-Related Chemical Compounds on Animals.

PAGE

RECENT LITERATURE.

Enlargement of the Prostate: Its Treatment and Radical Cure. By C. W. Mansell Moullin. Philadelphia: P. Blakiston, Son & Co. 1894 244
Ectopic Pregnancy: Its Etiology, Classification, Embryology, Diagnosis and Treatment. By J. Clarence Webster, B.A., M.D., F.R.C.P. New York: Macmillan & Co. 1895 245
Urinary Surgery. By Hurry Fenwick, F.R.C.S. London: Hirschfeld Bros. Bristol: John Wright & Co. 1894 245
Principles of Surgery and Surgical Pathology. By Hermann Tillmanns, M.D. New York: D. Appleton & Co. 1894 246
Chemistry: General, Medical and Pharmaceutical, including the Chemistry of the U. S. Pharmacopœia. By John Attfield, F.R.S. Philadelphia: Lea Brothers & Co. 1894 246

EDITORIALS.

FLOATING BODIES IN JOINTS 246
THE USE AND ABUSE OF THE CURETTE 248
MEDICAL NOTES 249
Reported Danger of the Invasion of the Pacific Coast by Cholera. — The French Congress of Alienists and Neurologists. — The Effect of Removal of the Ovaries upon the Sexual Appetite. — False Reports of Contagious Disease. — The Prevention of Blindness. — Uterine Flatus. — The Question of the Effects of the New Magazine Rifles. — The Tongue-Traction Method as applied to Birds. — Tuberculur Infection in Street Cars. — Intellectual Detachment.
New England.
Acute Infectious Diseases in Boston.
New York.
Visit of Dr. Forbes Winslow. — Fatal Effects of Hot Weather. — Recovery from a Severe Electric Shock. — Anthrax in the State of New York. — The J. Hood Wright Memorial Hospital.

MISCELLANY.

RESULTS OF THE ANTITOXIN TREATMENT OF DIPHTHERIA IN GERMANY 251
THE TREATMENT OF TETANUS WITH TETANO-ANTITOXIN 251
A CENTENARIAN SURGEON 251
METEOROLOGICAL RECORD, AUGUST 24, 1895 252
RECORD OF MORTALITY, AUGUST 24, 1895 252
ARMY AND NAVY SERVICES 253
SOCIETY NOTICE 252
RECENT DEATH 252
BOOKS AND PAMPHLETS RECEIVED 252

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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Lecture.

METRITIS AS A CAUSE OF MISCARRIAGE.[1]

BY CHARLES GREENE CUMSTON, B.M.S., M.D.,
Instructor in Clinical Gynecology, Faculty of Medicine, Tufts College; Member of the Société Française d'Electrothérapie, etc.

LECTURE II.

GENTLEMEN: — In this lecture, I propose to study the different varieties of metritis that produce miscarriage. The subject is a long but interesting one, and I trust that you may find it so.

According to the modern theories, it may be said that all inflammations of the uterus are of infectious origin. It is now a long time since Schroeder put forth this idea; but it was not generally accepted until the writings of Steinschneider and Winter on gonorrhea, and those of Goenner, Doederlein, Straus, Sanchez Toledo, Peraire and Widal on puerperal fever had appeared. The most frequent infection is either exogenous or hetero-infection by germs coming from without. It is also an established fact that in some cases, more infrequent however, the infection comes from the uterus or vagina, in which case you have a real auto-infection. In the healthy female, the vagina affords a home to a host of virulent bacteria which enter into action whenever favorable circumstances are present, as, for example, any *débris* that may remain *in utero* after a labor or miscarriage.

According to the part attributed in the etiology of the abortion, the metrites may be divided into two groups. The first have an undoubted and marked influence in predisposing patients to abort; these are puerperal and gonorrheal infection. Those of the second group are not so characteristic in the production of miscarriage, either on account of their nature or the degree of their influence on interrupting pregnancy. In this class I include syphilis, tuberculosis and the general infectious diseases.

We will now proceed to the study of each one separately, and will begin with puerperal metritis. It is now generally admitted that a great number of metrites have their origin in a septic inflammation brought on by a labor or miscarriage, and have for their agent the streptococci coming from the vagina, and usually brought from without by means of unclean instruments or hands.

After labor, the uterus even when normal, or after an abortion, presents a most favorable soil for culture to all infectious bacteria. At the same time the organ is in a particular condition of hyperplasia and congestion, which demands certain special hygienic conditions in order to progressively disappear. Now, these conditions are unfortunately very often neglected, and it is for this reason that post-puerperal metritis is so frequently met with. It occurs especially when the labor or miscarriage, as the case may be, has been abnormal, and may continue forever in a chronic form if an antiseptic treatment of the most rigorous kind is not immediately put into action. As after labor, there is only a thin layer of mucosa made up of a stratum of young cells, and the bottoms of the glandular culs-de-sac are widely open, it is evident that an infection which is deep in its origin, will remain deep.

In post-partum endometritis, if the uterine muscles contract promptly, thus reducing the surface of the cavity of the organ, the mucosa is massed together, giving it the appearance of thickness, and little by little during reparation, it will enclose in its depth the tissues primitively invaded by septic inflammation, and a chronic condition is set up from the beginning. This metritis often produces sterility; but you must not think for a moment that conception or pregnancy is not possible in these cases. However, it is exceptional that labor takes place normally or at term, and from my observation, miscarriage is extremely frequent, and I do not hesitate to say that metritis is the cause of the greatest number of abortions.

I must not forget to mention, as an important factor in the production of endometritis post-partum, the too hasty getting up of the patient after labor. It is a hard matter to decide what pathological type a post-partum endometritis due to infection will assume. I have met with many varieties, most generally diffused, with tendency towards the plastic, catarrhal or hemorrhagic types, although I am inclined to believe that the latter only occurs when there remains some *débris* of the decidua in the uterine cavity after an abortion, and that in this case there is no infectious process.

Beside puerperal metritis, there are other metrites which occur after attenuated septic conditions, and probably have their starting-point in the vagina, in which altered secretions or the blood of menstruation form the culture media for the development of the pathogenic agent; and a traumatism or severe congestion which causes a disturbance or lesion of the lining epithelium will start up an inflammatory process that rapidly extends over the entire mucosa. This form of metritis will also facilitate miscarriage.

We now come to the important subject of gonorrheal metritis; and although it is only recently that this type of uterine inflammation has been admitted by pathologists, still Barnes and Schroeder taught that gonococci infection played an important part in the etiology of miscarriage. Richard and Bousquet consider it as very frequent. The uterus is a more favorable medium for the growth of Neisser's organism than the vagina, on account of the special epithelial lining of the latter, as has been demonstrated by Steinschneider and Eraud.

Gonorrheal metritis is often primary, while the specific vaginitis is the consequence, the latter condition being rather a desquamation or maceration than an inflammation proper. This, I repeat, is often the case, but not always so, for I have seen cases in which the vaginitis was certainly primary, and under proper treatment the uterus was not infected.

The cervix is the primary seat of infection of the uterus, and from this the gonococcus invades the remainder of the organ. The infection may remain for a long time localized in the cervix in an attenuated and latent state, and then after traumatism, fatigue or labor, the infection lights up and quickly invades the entire organ, even extending to the tubes and peritoneum.

Noegerrath even went so far as to say that 75 per cent. of women infected with gonorrhea had endometritis and perimetritis following labor. Pozzi does not think this proportion too large if perimetritis be replaced by salpingitis. Sterility is a common consequence of this form of metritis and especially so if the adnexa are involved. However, gonorrheal endometritis is met with in pregnant women. It often begins before pregnancy, and the presence of the fecundated ovum in the cavity of the uterus, only aggravates the pre-existing inflammatory lesions; and Veit is even of the opinion that this always happens, the endometritis only showing itself for the first time during pregnancy, although it was there before this took place. But let me add that a healthy uterus can be infected during gestation, and this certainly does sometimes occur.

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[1] Being four Clinical Lectures delivered at the Suffolk Dispensary, Boston.

The pathological type that this form of metritis takes in pregnant women is, in the majority of cases, pyogenic; and there are also, perhaps, certain hyperplastic forms. Whatever this may be, it often interrupts the pregnancy, and Müller considers it a frequent cause of habitual abortion. Winckel believes that with the progress of the disease a similar pathological process takes place on the surface of the ovum, which results in rupture of the membranes.

Of all infectious diseases which complicate pregnancy, syphilis is the most important, especially on account of its great frequency. Its influence on gestation has been known for a long time, and it is exceptional that gestation goes on to term without some mishap. According to Blaise, the proportion of miscarriage and premature labor is 36.8 per cent.; while Legrand has found about the same, namely, 35.2 per cent.; in other words, about one miscarriage out of every three full-term pregnancies. Syphilis varies greatly in its effects, according to its age and whether the subject has followed a regular course of treatment or not. If the woman was syphilitic before conception, Fournier believes that she is more predisposed to miscarriage than if she contracted the disease during pregnancy. It is a fact that a large proportion of abortions follow a syphilis contracted before conception. In this case several miscarriages will succeed one another; but as the disease becomes attenuated, the fetus will develop to a greater age, and dies more and more late in gestation, and may even go to term, being born with or without syphilitic symptoms, and only die later.

It is also a fact that the severity of the syphilitic accidents and the abortions vary in an inverse relation to the age of the syphilis; but it is impossible to calculate how much time it will take for an untreated maternal syphilis to lose its effects on the ovum. If the subject becomes infected at the same time as conception the danger is about as great, and, as a rule, she will abort; but when the disease is contracted during gestation, and especially during the last three months, there is much less chance of the pregnancy being interrupted.

Syphilis in the father may not only infect the mother and through her the fetus, but may, although exceptionally, infect the child directly, as Fournier has observed; and in this case, if the mother contracts the affection, it will be from the fetus through the placental circulation. The majority of writers attribute the production of abortion in syphilis to the fetus. The syphilitic virus, whose nature is still unknown, passes from the mother to the fetus and infects it, while the serious organic lesions produced by the infection, death, maceration, finally produce its expulsion from the uterus. There are many cases of this kind, but I am of the opinion that they are not as common as those in which syphilis has produced lesions of the uterus. We have many cases on record of syphilitic metritis when there was no pregnancy, and I believe that when we shall have at our disposal the same means of diagnosis for syphilitic-metritis that we possess for the tubercular variety, recognition of the affection will become of ordinary occurrence. Bonnet records many cases of syphilitic metritis in his thesis, and even mentions some in which the subjects who had always had a normal uterus, were suddenly seized with an acute metritis at the time that the syphilis appeared. He concludes that these uterine symptoms met with in the very early stage of syphilis are the result of a characteristic anatomical lesion of the uterus, which develops by the presence of the general infection.

Secondary syphilis acts on the uterus in the same manner as on the liver, kidney and other viscera; and as the uterus is the principal organ of woman, and for that very reason is, like all active organs, subject to disease, it is one of the first to undergo the bad influence of this general infection. It becomes diseased and the symptoms of this anatomical change are leucorrhea, metrorrhagia and pain, symptoms which are not to be directly attributed to the syphilis, but to a well-developed metritis, which has been produced by the syphilitic infection. The case of a young syphilitic woman is recorded by Petit, who developed a typical endometritis during the secondary stage, while the genital organs presented no signs of specific accidents.

I have recently had a young married lady under my care, who consulted me for great pain and swelling in her nose. Another surgeon had told her she had polypus and advised removal. Not finding any polypus, and after careful examination, I made the diagnosis of syphilitic necrosis of the bones of the nose and placed the patient on protiodide of mercury and iodol. She did so well that in ten days' time the lesions of the nasal bones had about disappeared. I then sent her to Schintznach in Switzerland for the summer. She returned in the fall perfectly free from any manifestation of the disease, when early last winter she developed as acute a type of metritis as you could wish to see. Under mercury and iodol internally and a little local treatment this metritis subsided, and according to my advice, the young lady is at present taking a cure at Luchon. Now, this patient who had been divorced some two years before she came to me, had never had any skin or other accidents until those of which I have spoken, and knowing the social position and reputation of my patient, I feel certain that the metritis in her case could have no other explanation than that of the tertiary form of a syphilis which she had contracted from her husband soon after their marriage.

Heitzmann believes that the proliferation of the internal lining of the vessels is a characteristic sign of syphilitic metritis.

Admitting that the non-pregnant uterus may be the seat of a syphilitic metritis, it will be all the more susceptible to this affection during pregnancy, which renders it a *locus minoris resistentiæ* in the true sense of the term. It is true that in order to prove this, we have no histological or bacteriological data, but there are clinical facts on which we can base this hypothesis. When the feticide action of syphilis is severe, when both parents are infected to a high degree, the fetus is generally killed by the syphilitic virus, and is expelled sometime afterwards in a macerated condition. In this case the endometritis is no longer a cause; it may even occur after the death of the fetus, according to Duncan and others. But if, for example, the mother is alone infected, especially if syphilis was contracted after conception, and if pregnancy is troubled by pains, leucorrhea and slight hemorrhages, the fetus will come away living, and there will be a retention of the hypertrophied decidua with well marked changes in the decidua serotina. Here, gentlemen, I do not see how this condition of affairs can be explained in any other way than by a syphilitic endometritis.

Infection of the fetus and endometritis may also coexist, in which case pregnancy is interrupted, the fetus being expelled in a macerated state, and the hypertrophied placenta is retained. This hypertrophy of the placenta, which is so often related to endometritis of pregnancy, has been put forward by Pinard as symptomatic of syphilis; and I have seen this pathological condition in several syphilitic subjects whose children were born with evident syphilitic lesions, but this question will have to be studied, since as yet nothing is established regarding the histology of syphilitic placenta. The existence of primary genital tuberculosis is no longer doubted. In 1884 Fernet demonstrated it in women, showing its sexual origin following coitus with a tuberculous male. The tubes are most always the starting-point of tubercular lesions; but tuberculosis of the uterus is also known. and it is a positive fact that it can be primary, following direct inoculation.

Pozzi considers it an infrequent disease, while Jouin and others believe that tubercular endometritis is more common than tuberculosis of any of the other genito-urinary mucosa; for the reason that the endometrium is soft, spongy and very rich in tubular glands, all of which conditions are especially favorable for the development of an essentially anërobic bacteria. The disease is, in the first stage, a tubercular degeneration of the uterine mucosa, but the parenchyma of the organ may also be invaded.

There are two types of tubercular endometritis, one is of tubal origin or descending endometritis, the other is ascending and probably sexual in origin; the first type is by far the most frequent. The diagnosis has often been verified by microscopical examination and by the inoculation of guinea-pigs or rabbits. Sterility is very common as long as the tubercular inflammation exists in the mucosa, although Cooper mentions a case in which conception took place in a tuberculous uterus, the woman dying in the third month of gestation from a spontaneous rupture of the organ.

When endometritis or salpingo-endometritis occurs during pregnancy, abortion is nearly always unavoidable. The following case, due to Gusserow, is instructive. A woman was afflicted, after conception had taken place, with a descending salpingitis and a tubercular endometritis, and aborted at the fifth month. The post-partum was complicated by a puerperal infection and acute miliary tuberculosis, whose progress was found to be due to a thrombus derived from a large vessel in the uterine walls, in the centre of which was found Koch's bacillus.

Secondary tuberculosis is much more frequent, that is to say, a tuberculosis developing during a tubercular degeneration in some other organ, especially the lungs. You consequently can have a secondary tubercular endometritis in pulmonary tuberculosis, as well as a pulmonary infection following tuberculosis of the uterus and tubes.

We have recently had a case at this clinic of what I considered and diagnosed as tubercular salpingo-endometritis. The history is as follows: A. W., age twenty-one, married. She is a pale, thin and sickly-looking subject. Complains of pains between the shoulders. Husband decidedly tuberculous. The patient coughs a good deal. Appetite poor, bowels irregular, tongue and mucosa pale, pulse-beat weak, 81 to the minute. No bladder symptoms. Sleeps well. Menstruated at fourteen, regular, no pain until married at seventeen, shortly after which menstruations ceased. First child three years ago, labor normal; second child sixteen months ago, precipitated labor, post-partum hemorrhage, and retained placenta which was removed manually. Since last labor the menses have not appeared. There is profuse leucorrhea, pain in left ovarian region, the latter rendering the patient incapable of doing anything. Examination of chest shows the heart to be small, while in both apices of the lungs fine crackling râles are heard; dulness of apices on percussion. Examination of the genital organs showed a lacerated perineum, uterus anteverted, slightly tender and enlarged, and rather bound down by adhesions, right adnexa apparently normal, left tube about the size of a small sausage and very tender.

Since the above notes were taken the patient has had a hemoptysis, and the lung symptoms are decidedly worse. In the case of this patient I would not like to say whether the tuberculosis of the organs of generation were the primary seat of the disease, from direct inoculation from the husband, or whether the infection was secondary to the lungs.

As to whether there is a secondary tubercular endometritis in phthisical pregnant women, or what part it plays in interrupting gestation, I am not prepared to say; but if it is found consecutively in the non-pregnant female, or primarily after conception, it appears to me that its existence is a well-founded possibility, and the case that I have just related seems to bear out this opinion. If it is present during pregnancy, I think it probable that it would not remain without influence in the production of abortion, although Lop thinks that tuberculosis does not fatally interrupt pregnancy, but that it is a continual menace for both mother and fetus. It is of common observation that as long as a phthisical woman remains in fairly good condition, pregnancy goes to term; but if the affection becomes worse, miscarriage is pretty certain to occur.

Intoxication of the organism is generally admitted to be the cause of miscarriage in these cases. As you know, Koch's bacillus, although it has been reported to have been found in the blood of the living, does not often invade this tissue, for I consider the blood as a tissue; it is the toxines secreted by the organism that do the harm. That the bacillus of tuberculosis can pass from mother to child is an established fact and Herrgott, of Nancy, demonstrated the tuberculous virulence of the amniotic fluid obtained from a phthisical woman.

The knowledge of the fact that various pathogenic organisms can pass from mother to fetus is a great scientific conquest, but there are various opinions regarding the part played by the placenta in this process. For many authorities, changes in the placenta are not considered as essential for the transmission of bacteria, and Chambrelent is of this opinion, for in his experiments on female rabbits he never found that organ pathologically altered, but Malvos believes that in order that a mother can directly inoculate the fetus with micro-organisms there must be a lesion of the placenta, while Schmorl and Birch-Hirschfeld found small granulations and Koch's bacilli in the placenta of tubercular guinea-pigs.

Last summer Charrin and Duclert reported a series of experiments, showing, on the one hand, that intoxication by the toxines, and, on the other, external poisonous material, as lead, mercury or substances derived in certain cases from cellular life (as lactic acid) aid the passage of bacteria through the placenta in a variable degree. According to these writers, the glands which are often excellent fortresses are after a time destroyed by the secretions of the bacteria, as, for example, the kidneys, the organisms then penetrating, going from the capillaries into the tubuli, especially after the epithelial structures are deteriorated. And they conclude that at present they would say that the toxines act more on the cells of the organism than on the virus itself. Rémy examined the placenta of phthisical women who had had premature labors, and found their uterine surfaces whitish in color while there was a degeneration of the decidual cells.

Consequently, I think it safe to hold that in some cases tubercular endometritis is consecutive to a pulmonary infection, and may interrupt a pregnancy as well as producing lesions of the placenta, and by this means infecting the fetus.

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Original Articles.

THE ETIOLOGY OF DIPHTHERIA AND THE USE OF ANTITOXIN.[1]

BY HAROLD C. ERNST, M.D., BOSTON.

The etiology of diphtheria may be said to be so firmly settled at the present time that it is not necessary to rehearse the proofs that have been brought forward to demonstrate it; but the difference between diphtheria and those processes that resemble it do not seem to be any too clearly impressed upon the minds of the general profession.

The recent advances in our knowledge of the infectious diseases have not met with ready belief, possibly because of a lack of understanding of the changes that these advances impose. It is not an easy matter to learn that not all processes presenting similar clinical pictures are due to the same cause; and it appears to be equally difficult to bear in mind that entirely different series of phenomena may be produced by the same infective agency, acting on individuals with different personal peculiarities, and even in the same individual in different localities.

Now the recognition of these facts and the bearing them constantly in mind is absolutely necessary for understanding the present position in regard to the etiology of diphtheria. This disease is no longer to be considered to be one set up usually in the throat, to be detected by a certain definite chain of symptoms, but the name must be confined to that series of changes in which the bacillus first seen by Klebs, and first studied by Löffler, is active as a causal factor.

The history of the long series of experiments by which this has been established would be tedious to rehearse in this place, but since the very beginning, with the publication of Löffler's work, the evidence has been accumulated, until now there can be no doubt of this fact, that the bacillus frequently called by his name is the cause of by far the larger number of cases having the clinical aspect of diphtheria, and that, therefore, this name should be given to the processes set up by this bacillus and to none other.

At the same time, it should be very carefully borne in mind that there are other changes, occurring not infrequently, that resemble diphtheria as thus defined very closely, and that at present are indistinguishable from true diphtheria by any practicable test but that of the cultural examination. Practically such cases may be just as severe and probably just as infectious as true diphtheria, although not usually so, so far as my knowledge extends; but this fact does not in the least lessen the importance of an exact diagnosis; it should rather serve to arouse an increased enthusiasm in the study of what these other processes are.

The facts being these, it is natural that the question should be asked: "What difference does it make if my patient has a 'bacillus' sore throat, or any other kind of sore throat, if the clinical picture be the same?" But such a question can hardly be repeated in earnest after the events of the last year. Of course, it makes as much difference as it does whether it be true tuberculosis or not in a person with a destructive process in the lung.

We are supposed to be entering upon an era of "specific" medication based upon the knowledge gained by our studies of the bacteria and other micro-organisms; and surely, if specific treatment is to be carried out, a specific diagnosis must go hand in hand with it. This may appear to be an unnecessary reiteration of facts known to us all, but these facts are not always borne in mind — the best example of what I mean being found in connection with the disease under discussion to-day. It is the custom abroad, in many of the hospitals, to inject *all* cases of sore throat with the antitoxin of diphtheria, without waiting for the result of the cultural diagnosis; and from one point of view, this method of procedure is perfectly justifiable and has been adopted at least in some instances in this country. It is right to do this, for the reason that all experience and analogy show that the earlier the antitoxin is used the better the results; and the claim is still made in Berlin that no case has been lost when the injection has been made on the first or second day of the disease — of course, after that time the mortality increases. If, as it is supposed, the antitoxin has no deleterious effect in non-diphtheritic cases, then, of course, no risks should be run by delay in its administration. On the other hand, it is difficult to see how the antitoxin can have had a beneficial effect in cases of recovery in non-diphtheritic cases in which it has been used. It either is or is not a specific against diphtheria, and so far as we yet know it has no specific action upon the bacteria or their products that are concerned in the production of the non-diphtheritic processes in the throat. We must conclude, therefore, that in the cases in which its use has apparently been beneficial the results are merely coincidences, or else true diphtheria was present after all.

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[1] Read at the Annual Meeting of the Massachusetts Medical Society, June 12, 1895, and recommended for publication by the Society.

This conclusion seems necessary, for the reason that the whole of "serum-therapeutics" depends upon it, for which statement some explanation may be found in the lines of modern research. These are almost wholly towards the question of immunity. What this is supposed to be it is not necessary to discuss at length, but we may recall that there is a "natural" and an "acquired" form; the former existing in certain races of animals or in single individuals of a race, rendering them insusceptible to the attacks of certain infectious diseases. The latter is the insusceptibility to a second, acquired by individuals who have passed successfully through a first attack of an infectious disease, and is of very varying duration.

Now it has been known for some time that this acquired immunity may be artificially induced in animals by varying procedures connected with manipulation of the bacteria or their products, or, occasionally of the animals themselves. Of course, the discovery of the possibility of successfully accomplishing this object in a manner free from danger was, to the medical man, like a burst of sunlight through a fog to the sailor; and the literature of modern experimental medicine is largely made up of the record of efforts to this end. Thus far, diphtheria is the disease in which these efforts give the greatest promise of success, but at the best this success cannot be said to be complete until some better means of preparation and administration has been devised for the remedy used.

The exact methods by which the antitoxin is produced will be treated later; the consideration of the steps that have led up to its use at all may, however, be of interest, and these steps include all of those that have been taken in the attempts to secure the artificial immunity just spoken of.

The theories of the causes of immunity are many, and we do not yet know whether one or all of them are to be considered active in producing the result; the truth appears to lie between the extremes, and the facts seem to show that immunity can be explained only by a combination in varying degrees of activity of the several causes that have been suggested, and that at one time one of these is the more prominent, and at another time, or in other individuals another takes the more prominent part.

The important theories that have been advanced to explain the production of immunity may be briefly stated as follows: First, and especially upheld by the French, is that of "phagocytosis," due, so far as its elaboration is concerned, to Metschnikoff. According to him, the phagocytic power is exercised by the leucocytes, of which he distinguishes several varieties. The *lymphocytes* are small leucocytes with a large nucleus, that are surrounded by a small quantity of protoplasm; they are very numerous in lymph, and present all degrees of shape in their transformation into large leucocytes called *mono-nuclear leucocytes*, whose nucleus is frequently in the shape of a kidney or bean. The *eosinophilic leucocytes* of Ehrlich have a lobulated nucleus, and their protoplasm contains certain granules that stain intensely with the acid aniline dyes, especially with eosine; they are supposed to develope at the expense of the bone marrow. The most numerous of the leucocytes are called *polynuclear*, for the reason that their nuclei are most frequently separated into several parts by exceedingly fine lines of division; their protoplasm contains granules that most frequently stain with a mixture of the acid and basic dyes only, and they are therefore often called *neutrophilic* leucocytes; they develop in the blood from the small cells furnished by different organs. All leucocytes throw out protoplasmic appendages that enable them to move, but not all of them are capable of englobing foreign bodies, that is to say of "phagocytosis"; this property belongs only to *mono-nuclear* and *neutrophilic* cells, and permits them to englobe the bacteria with which they find themselves in contact, and these bacteria are often englobed in the living condition. This property of englobing and destroying virulent bacteria has been said by one set of observers to be the cause of immunity; but many experiments, those of Charrin especially, have shown that there occur substances, in the fluids of immunized animals, that modify the bacteria and their action, independent of the presence of the leucocytes, showing that phagocytosis cannot explain all the phenomena of immunity at all times.

The bactericidal power of the blood serum is another of the causes of immunity that has been put forward. Grohman and Fodor first demonstrated that when bacteria were grown in the blood their vitality was diminished, but the final result of the work of Buchner, Ogata, Lubarsch, Nissen, Hankin, and many others, is to show that the destruction of the bacteria in the serum is much more active out of the body than in the vessels; if the cells and proteid materials of defibrinated blood be allowed to settle, the bactericidal power is found in the sediment and not in the serum; when the leucocytes remain intact outside of the body, the serum is not bactericidal, but becomes so when the white globules are destroyed. As a conclusion from all the work upon this line of research, it would appear that the phagocytes destroy the bacteria by digesting them, and that the feeble bactericidal power of the living serum exists as a result of the breaking up of some few phagocytes in the body (Cheron).

Third, and most important to our present subject, is the theory of the "antitoxins," claimed by the French to be a rejuvenation of the old theories of Chauveau. These antitoxins have been worked out for but a few diseases at all, and farthest in diphtheria, and we do not even yet know precisely what they are.

One theory of their formation is this: The bacteria produce, during their growth, a new compound, a toxine, which is hurtful in varying degrees to the tissues in which it is formed, and which excites a new functional activity in the tissue cells. This new functional activity results in the secretion by these cells of a new product that has a neutralizing effect upon the toxine. This process goes on in all cases of diphtheria, for example, and as the formation of the neutralizing substance progresses more rapidly than the production of the toxine, recovery occurs; and, on the other hand, if the toxine is produced sufficiently to prevent the appearance of the new functional activity of the cells, recovery does not occur. Precisely how the neutralizing effect of the antitoxin takes place is not known. It is not by a direct chemical action, at any rate in tetanus, for it has been shown (Buchner) that a prolonged contact of the tetanus toxine with the antitoxin does not destroy the former. It would seem, therefore, that these two substances are antagonistic only in the sense that one — the antitoxin — deprives the tissues of their receptivity for the toxine. However that may be, the experimental evidence shows conclusively that it is possible to produce an immunity to an infectious disease by artificial means, and that this immunity may be produced in various ways.

The attempts to secure immunity have been carried on for years; they were begun before the object aimed at was even fairly understood. From the substitution of a milder disease for a malignant one of the same type, as is done in vaccination against small-pox, the chain of experiments has extended through the use of the various forms of attenuated virus and bacterial products to this last one which gives so much promise. The use of the serum containing the antitoxines is but the natural growth along the line in which experiment has been directed since the study of the bacteria began under modern conditions, and the whole history is better illustrated in the case of diphtheria than in any other disease. Beginning with Löffler's cultivation of the bacillus (1883), our knowledge of the etiology and management has steadily advanced. Roux and Yersin marked an epoch by their classical monograph, clearing up many things from a clinical standpoint and emphasized by their hospital statistics the need of a greater reliance upon the bacteriological diagnosis. These authors, with Frosch, showed that the bacilli are not always confined to the seat of the local manifestations, but are frequently distributed, although often in small numbers, throughout the internal organs. Brieger and Fraenkel (1891) began the special study of the toxine. Wassermann and Proskauer (1892) apparently isolated it, although Fraenkel failed to secure any immunizing results with the dry powder of this substance. Behring began in 1891 his investigations on diphtheria, which apparently led the way to what has already been spoken of as a "System" of Blood-Serum Therapeutics. His enthusiastic work, together with that, among others, of Wernicke, Aronson, Ehrlich, Kossel, Wassermann and Roux, have led us through the slow and dangerous immunizing of the lower animals, by means of the cultures and toxines of the bacillus of diphtheria, to the rapid and safe immunity following the use of the antitoxin contained in the serum of immune animals.

It is this point that we have now reached; that we *have* come thus far, all the evidence tends to show, although no one should suppose for a moment that there has been discovered a remedy for all stages of the disease. Nor should the general profession feel that the end is reached; much more is to be done before it can be said that more than a beginning has been made. We know that the serum of immune animals, and even the milk of some of them, possesses this mysterious property of neutralizing the effect of the poison elaborated by the bacillus, but we hardly know anything more.. This is notably the case as far as regards the dosage and the methods of testing the strength both of the toxine and of the antitoxin. The standard, or rather the standards of the Germans appear to be unnecessarily complicated, and my personal experience has been such as to emphasize the difficulty of carrying out the comparatively simple method of Roux. Because of what I believe to be the unavoidable variability of the standards employed, there cannot be any exact dosage given, and it is fortunate that a few cubic centimetres in excess does not make any practical difference, so that, given a specimen of antitoxic serum, a slightly larger quantity than that directed may be used with safety. Something may be hoped for, in the direction of exactness, by the method of evaporating the serum to dryness and then testing its power, but even this is but a make-shift, as compared with the chemical accuracy possible in the management of the known compounds. We must look to chemistry for aid in this direction, and some method of extracting the antitoxin must be devised before we can face the problem of exact dosage with any prospect of its proper solution.

The results of the practical application of the facts that we have learned will be stated by those following me this morning, but there are a few points that I may speak of before closing.

As is fairly well known, the bacteriological diagnosis of diphtheria has been made for the general profession for some time at the Harvard Medical School, in the bacteriological laboratory. For over a year it was done by us — mainly by Dr. McCollom — as an experiment, for the purpose of testing its value and the desire for such an investigation by the medical profession. Systematic work of the kind, however, was first done in this vicinity at the Boston City Hospital, and of course is still carried on there. Since last fall we have acted for the Boston Board of Health, and for many of the communities lying in close proximity to us, and, so far as we can judge, there is a constant increase in the importance attached to this method of diagnosis. Since the first of November, 1894, there have been sent in nearly five thousand cases for diagnosis, and in the neighborhood of one thousand for re-examination. Of course, all of the primary examinations are voluntary on the part of the physician, and would hardly have been sent if there had not been much reliance placed upon the method. We are not able to follow each case, but where inquiries have been possible the results have even surprised ourselves by their accuracy. Of course nothing is infallible, and here is no exception to the rule, but there has not yet been given evidence to show that this is not by far the most accurate method of diagnosis at our command. Whether due to the wide use of this method and the consequent detection and isolation of otherwise unsuspected cases, or whether due to this in connection with the systematic inspection of the schools, certainly the great epidemic of diphtheria in Boston this last winter has diminished in a very gratifying manner. The disease was at its highest at the beginning of the systematic use of the bacteriological diagnosis and the inspection of schools, in December, 1894. From that time, month by month there was a steady fall, sharper than occurred in previous years, until the slight rise that apparently always appears in May just before the schools are closed for the summer.

Of the inspection of schools, it may be said that it has happened more than once that a child has been sent home for a slight sore throat, and that cultures have shown the presence of virulent bacilli from one to three days before the clinical diagnosis of diphtheria was in any way justifiable, so that it would seem advisable for the cultural diagnosis of diphtheria to become even more a matter of routine than at present.

The preparation of the antitoxin of diphtheria is a matter of so much importance, requiring so much special knowledge, that we are especially fortunate in this State in having the supply under proper control; that for the City of Boston is at least in part provided for by the City Board of Health,— that for the State outside of the city by the State Board of Health.

THE PATHOLOGY OF DIPHTHERIA.[1]

BY WILLIAM T. COUNCILMAN, M.D., BOSTON.

IN speaking to you on the pathology of diphtheria it is impossible for me to give any new facts, or even to present the subject in a new way. Diphtheria to-day is probably the best known of any of the infectious diseases. Even in tuberculosis there are more problems to be solved by investigation. No other disease illustrates better how much a knowledge of the etiological factor has served to clear up the obscure points, both in the pathological anatomy and in the clinical features. At present the only obscure points in the pathology of the disease have reference to general pathology, and apply to other diseases as well.

By diphtheria we mean a disease produced by the action of a bacillus with definite morphological and biological properties which distinguish it from other micro-organisms, and which is known as the Klebs-Löffler bacillus. The anatomical lesions of the disease produced by this organism vary so much in their character, situation and extent, that these alone are not sufficient to characterize the disease. Moreover, similar anatomical lesions may be produced by the action of other causes. Usually, in every disease due to a definite cause, we are able to recognize the character of the disease by the character of the anatomical lesions produced by the action of the cause. In tuberculosis, for instance, we find certain alterations of tissue which are due to the action of the tubercle bacillus, and which have the same general character whether found in man or in animals. In other diseases, particularly in those in which the lesions have the general type of inflammation, similar lesions may be produced by a variety of causes. The recognition of the etiological factor thus becomes the only true basis for a scientific nomenclature of disease. It is also of the greatest practical importance for the hygienist and the clinician that the etiology should be made clear. Similar lesions, as we have said, may be produced by a variety of causes. In one case by an organism having little power of infectiousness when transferred to another individual, in another by an organism which under almost all circumstances carries with it the power of infecting other individuals. Treatment and hygienic measures based on a recognition of the cause are more intelligent and more efficacious than when simply directed against the lesions or the clinical symptoms. In diphtheria a special method of treatment has been found which is efficacious only against the conditions produced by the diphtheria bacillus.

In the pathology of an infectious disease we have to consider lesions of various sorts. In the first place, there is some point where the tissues have been invaded by the organisms and where lesions due to their direct action on the tissues will be produced. These are primary lesions of the disease. From this place the organisms may be carried to other parts of the body either along the same surface or by means of the blood or lymphatic circulation, and lesions similar in character may be produced in remote parts. In certain diseases which are distinguished as the toxic infectious diseases, and the best types of which are found in diphtheria and tetanus, certain coluable chemical substances are produced where the micro-organisms are localized, and these are absorbed and produce various lesions, some of which can only be recognized by the disturbances of function which they produce; others are apparent on careful examination. A third class of lesions may be produced by other organisms than the one causing the disease. These find in the primary lesions conditions favorable to them, and by their action may intensify the primary lesions or effect other parts of the body. The action of these other organisms makes many diseases mixed infections, and in the infectious diseases they play an important rôle. In an advanced case of pulmonary tuberculosis, only a part of the lesions which we find are due to the action of the tubercle bacilli. Many of the inflammatory conditions are due to the action of the pyogenic micrococci which find suitable conditions for their growth in the lesions produced by the tubercle bacilli. In diphtheria the death of the individual is frequently due to the action of these extraneous organisms, against whose action the specific treatment of the disease has no influence.

In diphtheria, in almost all cases, the primary lesions are found in the mucous membrane of the mouth, pharynx or larynx. The name of the disease is derived from the character of the primary lesions. There is an intense inflammation of the part affected, and it becomes covered with a membrane. The macroscopic appearance of this membrane is familiar to you all. Its situation and its character varies. It usually appears first over the tonsils, and from here extends over the adjoining mucous membrane, and may invade the soft palate, the base of the tongue, the pharynx and air-passages. In the air-passages it may extend from the larynx into the trachea, and even into the ramifications of the bronchi. Sometimes the membrane extends in an almost continuous layer over all these parts, sometimes only small isolated patches are seen. Large continuous masses of membrane may be formed by confluence of smaller patches. The color of the membrane, and its connection with underlying tissues, varies. In a well-marked case it has a dirty grayish or brownish color and cannot be easily removed from the surface. When it first appears it is thinner, of a whitish color, and may be removed from the surface. After death its connection with the tissue beneath is less firm, and it may be stripped off in large shreds. The adhesion of the membrane to the tissue beneath varies in different places. In the air-passages it is less adherent than in the pharynx, and not infrequently during life large masses of the membrane may become separated and coughed up.

The epiglottis also shows a varying degree of involvement in the process. There may be only small foci scattered over the surface of this, or the entire epiglottis may be converted into a dense, hard mass covered and infiltrated with fibrin. When the membrane is forcibly removed during life a raw surface remains. The mucous membrane in the vicinity is deeply injected, and there is swelling and edema of all the adjacent tissues.

On microscopic examination of the membrane it is found to consist largely of fibrin, in the meshes of which leucocytes and remains of the epithelial cells are found. The membrane does not consist of a homogeneous mass, but certain differences in structure may be recognized in it. Usually on the surface there is an indistinct granular mass which contains various sorts of bacteria. Beneath this a more regular mesh-work of fibrin appears, and below this again we find the fibrin in large, more or less regular meshes. In this mesh-work the character of the fibrin varies. In some cases the filaments are very fine, in others there are broad hyaline-looking masses. The surface beneath the fibrin is uncovered by epithelium. In some cases the epithelium is entirely destroyed, in others here and there, a few cells still adhering will be found. If the section has been made at the edge of the patch the fibrin may be seen extending over the epithelium.

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[1] Read at the Annual Meeting of the Massachusetts Medical Society, June 12, 1895, and recommended for publication by the Society.

A marked difference will be found in the relation of the membrane to the surface beneath, in the larynx and trachea as compared with the pharynx. In the trachea especially the connection of the membrane with the surface is much looser. It will usually be more or less separated from the surface by the necessary manipulation in hardening and cutting the sections, and a space will be found beneath it. The membrane is sharply separated from underlying tissue by the basement membrane of the epithelium. This basement membrane is swollen and hyaline, and more or less necrosis in the tissue immediately beneath it is seen. The blood-vessels are dilated, surrounded by numbers of leucocytes, and some of them contain masses of fibrin. The walls of many of the more superficial vessels are hyaline. In the pharynx, and particularly over the tonsils, there is a close connection between the membrane and the subjacent tissue. The dense basement membrane which forms the limit of the membrane in the trachea is not found here. There is some formation of fibrin in the loose interstices of the connective tissue, the filaments of which may be continuous with that on the surface. The membrane extends directly into the depressions and crypts of the tissue and into the mouths of the mucous glands. The tissue changes are similar to those described in the trachea. There is the same congestion of the blood-vessels, cellular infiltration, thrombosis and fibrin formation. In the later stages of the disease in both the pharynx and air-passages the membrane may become separated by a cellular exudation beneath it. After death it is softer and more easily removed.

The relation of the Kleb-Löffler bacilli to the membrane is interesting. The bacilli are most easily stained by the same method which stains the fibrin. Immediately on the surface of the membrane great numbers of various bacteria will often be seen. These are principally streptococci and other forms of cocci and bacilli. It is probable that these organisms find a suitable place for their development in the membrane, and to their action may be ascribed the breaking down of the fibrin reticulum to a granular mass. Among these various organisms the Klebs-Löffler bacilli can be recognized. They occur in definite groups, and can easily be distinguished from the other forms. Immediately below the surface the other organisms become less abundant and the groups of the Klebs-Löffler bacilli more numerous. In the lower portion of the membrane where the fibrin net-work is more dense, all of the bacteria are less numerous and often entirely absent. The subjacent tissue, even when intensely inflamed, rarely shows any organisms.

This description holds for the typical cases of diphtheria, but most cases seen at autopsies are not typical. In the majority of cases at the autopsy we do not find an extensive and definite membrane extending over the pharynx and uvula. In many cases only here and there small patches of fibrin are seen on the swollen dark-red mucous surface. Superficial ulceration and necrosis often mark the place occupied by the membrane during life. In some cases the only membrane seen is on the under surface of the epiglottis. The membrane is often so loose that it may be washed off.

There are various views held as to the formation of the membrane. These views are of importance in diphtheritic processes generally, and do not hold exclusively for diphtheria. The view most generally accepted is that of Weigert, in accordance with which the process consists primarily in a necrosis of the epithelial surface. The exudation from the vessels beneath comes in contact with this necrotic material, coagulates and forms fibrin. In support of this view we know that fibrin is always formed when an exudation comes in contact with necrotic tissue. No matter how the necrosis is produced, whether by chemical or mechanical injury, or by the primary action of bacteria, fibrin is always deposited in and around the necrotic cells. This view of primary necrosis is also held with some modification by Virchow. In his last publication on the subject he defines the diphtheritic process as necrosis of tissue. This does not necessarily lead to the formation of a pseudo-membrane, but when this is formed it is after necrosis has taken place. The epithelium is destroyed and removed, and the fibrinous exudation forms on a surface deprived of epithelium. Another view is that of Wagner, which has been accepted with certain modifications by Recklinghausen, and which is more fully expressed in the work of Smirnow on membranous gastritis. According to the view of Wagner the changes consist in a more or less marked hyperemia and inflammation of the tissue beneath. The membrane is formed in the place of the epithelial layer and is not an exudation from the vessels beneath. It is due to a fibrinous metamorphosis of the epithelial cells themselves. The cells are directly transformed into fibrin, the appearance of a network being given by vacuoles in the centre of the cells, with fibrinous processes proceeding from them. Wagner figures epithelial cells so metamorphosed that the cell is converted into an irregular vacuolated mass, with long processes proceeding from it, giving to the cell an appearance of branching antlers. Recklinghausen has modified this view of Wagner's in that he makes the formation of the diphtheritic membrane a part of the general process of hyaline degeneration. The epithelial cells undergo a hyaline degeneration, the hyaline material is formed in the cells and exuded from them, forming the reticulum. The process also extends into the tissue beneath, in which there is a similar hyaline degeneration of the walls of the vessels and of the tissues. According to Recklinghausen this hyaline degeneration of the tissues is the primary, and the inflammatory processes are superadded to this.

Oertel, in his great work on diphtheria, believes that the formation of the membrane is due to the coagulation of the exudation, and that the epithelial cells themselves take no part in it. The most careful of the recent investigations as to the nature of the diphtheritic membrane is that of Heubner. Heubner investigated the membrane during life by stripping off small pieces which were hardened in various ways and examined. He examined in this way portions of the membrane in various stages of the disease, commencing on the second day. He found that in the beginning of the disease the membrane was formed in the most superficial layer of the epithelium, and was due to coagulation between the cells. The epithelial cells themselves were not always necrotic and their nuclei could be recognized. With the extension of the membrane formation the lower layers of the epithelium were gradually implicated in the process, and here also coagulation of the exudation coming from the subjacent vessels could be made out. According to Heubner the Klebs-Löffler bacilli are not found in the membrane itself before the the third day of its appearance. It would seem most probable, from what we have observed of the membrane formation, that all these views are more or less correct. The membrane is formed both by a coagulation of the exudation and by a fibrinous metamorphosis of the cells themselves; not only of the epithelium, but also of the leucocytes which, in the early stages of the process, make their way from the subjacent tissue into the epithelium. We know that under other conditions from the cells themselves a material can be formed which has the micro-chemical reactions of fibrin.

This membrane formation, as we have said before, is not a property which exclusively belongs to the action of the diphtheria bacilli. The diphtheritic process, an inflammation with the formation of a fibrinous exudation, is one of the most common of pathological processes. We find it on all of the surfaces of the body. It is more commonly seen in the action of certain bacteria than others. Among the bacteria the pneumococcus is probably more apt to produce a fibrinous exudation than any other. The most typical fibrinous exudation may be produced by chemical irritants; the application of croton oil or of the vapor of ammonia to the mucous membrane of the pharynx or trachea will produce a typical fibrinous exudation.

The writer once saw a case in which an extensive membrane, extending into the larynx and trachea, was produced by the accidental application of croton oil. A man was brought into the hospital unconscious, in a condition of uremic coma. A few drops of croton oil were applied to the back part of his tongue. The patient accidentally made an inhalation at the same time, and the croton oil was aspirated into the air-passages. After death the entire surface of the trachea and larynx extending down into the finer bronchi was covered with a dense membrane which could not be distinguished from the membrane of a marked case of diphtheria.

A great deal of interest has come from the study of the cases of diphtheria at the autopsies at the City Hospital. It is known with regard to many bacteria, while their action is exerted more particularly at certain places, this being due to external conditions favoring their entry into the organism at certain places, and to the fact that in these places they find more suitable conditions for their existence, they may be found also in other uncommon situations. This is notably the case with the pneumococcus. There are few pathological conditions found in any part of the body which may not be associated with this organism. While the diphtheria bacilli are always found associated with the typical disease having its local manifestations in the pharynx or air-passages, they are more rarely met with in other parts of the body and associated with other processes.

It is our habit to make bacterial cultures at all autopsies from all of the principal organs of the body. In one case of acute endocarditis, typical Klebs-Löffler bacilli were found in the heart valves. These bacilli, morphologically, and in all of their cultured relations, were identical with the ordinary bacilli, but were devoid of virulence. They were associated with pneumococci, and the lesions were probably due to these. A similar case has been reported by Howard. His case was also one of endocarditis. The bacilli were found in the vegetations on the cardiac valves and in all of the organs. They were identical with the Klebs-Löffler bacilli with the exception of being non-virulent. In another case they were obtained from the lungs in a case of disseminated tuberculosis. There was a tuberculous ulcer of the trachea from which no cultures were made, nor were any made from the pharynx. In the culture from the lungs numerous colonies of diphtheria bacilli and streptococci developed in addition to a few colonies of staphylococcus aureus and other organisms. Streptococci were also found in the spleen. The bacilli killed a guinea-pig in thirty-six hours with the lesions of experimental diphtheria. From another case of a lung in a state of gray hepatization, the culture made from a consolidated area of the lung gave a few colonies of the Klebs-Löffler bacilli along with other organisms. A guinea-pig inoculated died at the end of three weeks. In a fourth case, one of extensive phthisis, the autopsy made at one of the insane asylums, a few colonies of Klebs-Löffler bacilli developed from the lungs. Unfortunately in but one of these four cases were the throat organs examined. The circumstances of the autopsy forbade the examination of the throat, but there was nothing clinically which directed attention to the throat. In the one case in which the throat was examined a typical tuberculous ulcer was found, from which, however, no cultures were made.

These cases are interesting, and it is difficult to fully explain them. The general result of cultures at autopsies shows that in most diseases there is a poly-infection when death takes place. Not only are the specific organisms of the disease found, but there are other organisms whose presence is more or less accidental and which have had little to do with the production of the lesions. They are usually the more common organisms which find opportunity for entering the tissues in the reduced resistance preceding death. It is probable that these four cases should be so regarded. Other organisms were present, and the lesions were not of such a character as to lead us to believe that the diphtheria bacilli had any part in their production. These cases are to be distinguished from true mixed infections in which distinct lesions due to the action of various organisms have been found. In the cases investigated at the City Hospital such mixed infections have been seen in typhoid fever, scarlet fever and measles; the lesions in these diseases being accompanied by throat lesions due to the diphtheria bacilli.

Diphtheria bacilli may be found at other places on the surface of the body. The intact epidermis of the surface of the body probably is an efficient protection against their action, but superficial abrasions or ulcers on persons with diphtheria are apt to become infected. The bacilli have been found in an anal fistula, in an ulcer on the arm, in excoriations on the face, and in a number of other places on the surface. The mode of infection is by the hands which may be assumed to be always infected from contact with the secretions of the mouth and nose containing the bacilli. Wright calls attention to the slight degree of virulence of the bacilli which are found in these places. In twelve cases in which the virulence was tested the bacilli from three had no effect on guinea-pigs, and in three other cases the inoculated animals lived more than a week. Wright states that a mild degree of virulence or none at all has been found in 50 per cent. of the organisms obtained from these places.

In some of the infectious diseases the organisms causing the disease are only found in connection with the primary lesions. In others there may be a general invasion of the blood and tissues with the organisms. In the early investigations on diphtheria the bacilli were only found in the primary lesions, and it was supposed that no general invasion of the body took place. More recently, Frosch and others have found the bacilli in the internal organs by the usual methods of culture. They are present in such small numbers that they are only found by using large quantities of the substance of the organs for the cultures. Wright's statistics of cultures show that they are most frequently found in the lungs, and more rarely in other organs; but they may be found in any of the internal organs. It is natural that they should be more often present in the lungs, from the close connection of these with the larynx and pharynx. The bacilli are present in these internal organs in such small numbers that they cannot be found on microscopical examination of the tissue, nor can they be shown to have any relation with the lesions in the organs. So far as we know at present the diphtheria bacilli are only capable of producing typical lesions on epithelial surfaces. It is to be expected that a few in the course of the disease may get into the blood or lymphatic circulation, and thus be deposited in the internal organs. When directly injected into the subcutaneous tissue of rabbits they induce extensive necrosis of tissue and inflammation.

We come now to the second class of lesions found in diphtheria, those produced not by the direct action of the bacilli on the tissues, but by the action of soluble chemical substances which are produced by the bacilli in the primary foci, and absorbed from there and carried to the tissues everywhere. Some of the lesions so produced are evident on macroscopic examination, others are only found on microscopic examination. Oertel, in his classical monograph on the disease, was the first to call attention to these lesions. Welch and Flexner have called attention to similar lesions in experimental diphtheria, and have shown that they may be produced by injecting into animals the soluble toxines derived from cultures of the bacilli. The most obvious of these lesions are found in the lymph glands of the body, and consist in hyperplasia of the lymphatic tissue. The lymph glands of the neck into which the lymphatics from the throat enter are the most affected, but all the lymphatic tissue, including the follicles of the spleen, take part in it. In the intestinal canal both the solitary follicles and the Peyer's patches are greatly enlarged, and the latter may present the appearance of the early stage of typhoid fever. The swollen glands are red and soft.

The spleen is somewhat enlarged, this being due to hyperplasia of the follicles and of the pulp. It is never so soft as in some of the other infectious diseases. The liver rarely shows much change to the naked eye. It is somewhat paler than normal, and occasionally small opaque spots may be seen in it. The kidneys are rarely affected. In forty-one autopsies on diphtheria, in but one case an acute interstitial nephritis was found. Diphtheria has not the same tendency to produce nephritis as have the other infectious diseases of children. Slight degenerative changes are found on microscopic examination sufficient to explain the albuminuria commonly present. In two of our cases ecchymoses were found in the mucous membrane of the stomach, and the bacilli obtained from them on culture.

On microscopic examination lesions consisting in small areas of necrosis, with nuclear fragmentation, may be found in all the organs. They are more common and more marked in the lymph glands than elsewhere. Oertel was the first to call attention to them. From our experience it would seem that they are more common in the experimental diphtheria produced in animals by inoculation than in man. These foci are not produced by the action of the bacilli. On microscopic examination no organisms are found in connection with them, and they may be produced by the soluble toxines obtained from cultures. They are of the same general character as the small necrotic foci found in the liver in typhoid fever, and which are produced not by the bacilli but by toxic substances absorbed from the alimentary canal.

We come now to the consideration of the third class of lesions, those due not to the action of the specific bacteria and their soluble products, but to other organisms which find favorable conditions in the primary lesions produced by the diphtheria bacilli. There is little doubt that in most cases, particularly in the later stages, there is a mixed infection in the primary lesions of the disease. It is very seldom that a pure culture of the diphtheria bacilli can be obtained from the throat. The most common pathogenic organism found with it is the streptococcus pyogenes, one of the pyogenic organisms. We do not know what part this organism plays in the primary process. It is quite capable of itself of producing a diphtheritic inflammation, which cannot be distinguished from that produced by the diphtheria bacilli. It is possible that it assists in the production of the membrane, or it may in some way favor infection with the bacilli. These other organisms act in two ways. They may be taken up from the throat by the blood and lymphatic vessels, enter into the circulation and produce a general septicemia, or they may pass from the primary foci into the lungs. Wright has found in twenty-six out of forty-one autopsies a more or less general invasion of the blood and tissues with the pyogenic organisms, among which the streptococcus was the most common.

Broncho-pneumonia is one of the most common conditions met with in the infectious diseases of children. It has been present in greater or less degree in twenty-four of the forty-one autopsies. Its cause must be attributed to the action of the streptococci. It is true that the diphtheria bacilli are found in the lungs in nearly all autopsies on diphtheria, and they may produce a typical membrane in the fine bronchi. On microscopic examination of the tissue they are not found in the alveoli in connection with the lesions, and from what we know of the pathogenesis of the bacilli it is not probable that they could produce such lesions. The streptococci or pneumococci in these cases are found in cultures made from the lungs and, on microscopic examination, in connection with the lesions. Moreover, similar lesions are found in scarlet fever and in measles. In many of the autopsies these pulmonary lesions are so extensive that death may be directly attributed to them. It would not be possible in the limits of this paper to consider the very interesting questions of the comparative virulence of the diphtheria bacilli and the characters pathological and clinical of those cases of angina which resemble diphtheria and are not produced by the diphtheria bacilli. Such cases are not infrequently met with. On the other hand, it should be remembered that inflammation produced by the diphtheria bacilli does not always lead to the formation of a pseudo-membrane. Cases have frequently been seen in which a simple angina has been associated with the bacilli. From the anatomical and experimental study of diphtheria we may regard as certainly established:

That there is a definite infectious contagious disease produced by the diphtheria bacilli.

Other organisms may produce lesions in the throat which are similar to the primary lesions of diphtheria.

The primary lesions of the disease are due to the action of the diphtheria bacilli. They are always found associated with these lesions, and are chiefly found on the surface or in the upper layers of the membrane.

There may be a more or less general invasion of the tissues by the bacilli. They are found in the internal organs in small numbers, and do not appear to have any relation to the lesions.

Lesions are produced in the internal organs by the action of soluble toxic substances which are produced by the bacilli in the primary lesions and absorbed. Similar lesions can be produced in animals experimentally by the injection of the germ-free filtrates of cultures.

Cultures made at the autopsies have shown that in most of the fatal cases there is a general invasion of the tissues by some of the pyogenic organisms, of which the streptococcus is the most common.

Infection with other organisms plays a considerable rôle in the pathology of the disease, and some of the most important lesions, as the broncho-pneumonia, are due to these other organisms.

There is not the same tendency to renal affections in diphtheria as in scarlet fever and other infectious diseases of children.

Abrasions of the skin in patients with diphtheria are apt to become infected with the bacilli.

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THE PREPARATION OF DIPHTHERIA ANTITOXIN.[1]

BY JOSEPH L. GOODALE, M.D., BOSTON.

THE general principles involved in the preparation of diphtheria antitoxin have recently become familiar to all medical men. Their recapitulation does not therefore seem essential for the purposes of the present paper, which are, first, to note the events of interest occurring during the prosecution of some recent work on the subject; and second, to direct attention to certain points of difficulty which have been encountered.

In view of the limited time at my disposal it appears preferable to omit detailed reference to the preparation of culture media and to the selection of special bacteriological apparatus. It will be sufficient to state that full accounts of the former are to be found in numerous recent works, while complete catalogues devoted solely to this subject have been issued by several manufacturers of scientific supplies.

The acquisition of a culture of diphtheria that will yield the requisite amount of toxine under specified conditions is a matter of the first importance. One culture may be a hundred times as productive of toxine as another, although both are grown under the same conditions. My own experience indicates that a satisfactory culture is something of a rarity. Cultures were tested from eight cases of severe clinical diphtheria in the following way: From each case a flask of bouillon was inoculated, and the virulence of the fresh twenty-four-hour culture tested by injecting into a guinea-pig one cubic centimetre. From the two pigs which died first, within two days, pure cultures of the diphtheria bacillus were again recovered, inoculated into bouillon, and grown under proper conditions for three weeks. At the end of that time the bouillon of one flask was found to be nearly twice as rich in toxine as the other, and this culture was used exclusively in the subsequent work. The virulence of this bacillus and its toxic productiveness have remained unimpaired after more than a hundred re-inoculations, covering a period of eight months.

When a flask of bouillon is inoculated with the diphtheria bacillus the following phenomena occur: At the end of a day or two the bouillon is generally turbid throughout, but with little or no sediment. Although the bacilli are now at the stage of maximum virulence, yet no appreciable amount of toxine is to be found, as may be shown by filtering off the bacilli, and injecting the clear filtrate into guinea-pigs. Large doses of this produce often no more effect than an equal amount of ordinary bouillon. At the end of a week a distinct sediment settles, and a thin translucent layer of bacilli can be seen floating on the surface of the liquid. Microscopical examination shows what is taking place: The sediment consists of dead bacilli, disintegrated, and no longer identifiable, while the surface layer is composed of living, rapidly multiplying bacteria of characteristic appearance. Toxine can now be demonstrated in the fluid.

During the next few weeks the sediment increases, often forming more or less coherent flakes and lumps, the superficial layer becomes thicker and more opaque, and is composed of scaly particles. If these be once separated by shaking they show no tendency to coalesce, but remain discrete while the intervening surface becomes covered with a film, slowly and progressively increasing in opacity. After five or six weeks the surface layer often sinks and disappears; examination shows very few living bacilli, but the fluid is rich in toxine.

It has been stated that toxine is not secreted by the living bacilli, but is the product of their disintegration after death. Whether this be so or not, the amount of toxine in a given bouillon culture is proportionate to the amount of sediment, that is, to the number of bacilli which have completed their cycle in the liquid. Multiplication of the bacilli is favored by access of oxygen, and it has been consequently recommended to grow the bouillon cultures in a current of air. It is unquestionably true that a bouillon culture three inches deep yields proportionately less toxine at the end of a month than one one inch in depth, there being in the latter instance a proportionately greater air surface. While oxygen is thus shown to be required, probably but a small amount is made use of, and I have not found that bouillon cultures one-half inch deep, grown in a current of moist air, yield more toxine than when grown in the ordinary cotton-plugged flask. Provided the layer of fluid be shallow the interchange of air through the cotton plug is probably sufficient for the needs of the bacteria. The risk of contamination is always greater even with the strictest precautions where there is a current of air entering the flasks; and, provided there is sufficient incubator space, the ordinary method seems to me preferable.

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[1] Read at the Annual Meeting of the Massachusetts Medical Society June 12, 1895.

The toxic strength of each lot of toxic bouillon is to be carefully determined. If of standard strength, one-tenth of a cubic centimetre should prove fatal to a guinea-pig in about thirty-six hours. The amount of toxic bouillon constituting the minimum fatal dose for a guinea-pig under these circumstances is a toxine unit. Since in the course of this work the toxic strength of the bouillon employed has not been constant, it seems preferable to designate the doses injected into horses, as toxine units, rather than so many cubic centimetres of toxine. Thus at the outset one cubic centimetre of bouillon contained five toxine units, and was consequently of half the standard strength, while later the standard strength of ten toxine units to the cubic centimetre was obtained.

For the filtration of the toxine from its detritus and still living bacilli, the Pasteur filter was used.[2]

The filtrate thus obtained from the bouillon is absolutely clear and sterile, but is, however, an excellent culture medium for bacteria that may find entrance. I have used as a preservative a ten-per-cent. solution of thymol in chloroform, which, added to the toxine in the proportion of one per cent., has efficiently checked the development of foreign germs.

With reference to choosing horses for the purpose of immunization, my experience is too limited to justify the formulation of definite rules. It is impossible to tell at the outset what horses will stand the process sufficiently well to be brought to a high degree of immunity, and what, on the other hand, will prove of only moderate value. A horse somewhat thin, with soft muscles, is easier to manage than a stout one, since the injections are more readily made, and the jugular vein easier of access. A horse of a vicious or nervous disposition is neither agreeable nor safe for the operator. The mallein test should be made before beginning treatment.

The process of immunizing the horses requires good judgment and extreme care. As to their feeding, it seems to me that until they have been bled they should not be treated very differently from any horse leading an inactive life. After each tapping a generous diet should be allowed. The weights and general condition are to be most carefully watched, and on any falling off the injections are to be suspended. As will be shown later this is a point of extreme importance.

For the injection of large amounts of toxine into the horses a syringe was used holding 100 c. c. The interposition of a short bit of rubber tubing between the needle and the syringe was found necessary to allow for sudden movements of the animal during the process. The short, stout tuberculin needle of the veterinarians causes practically no pain on being introduced, if the animal's attention be distracted by the application of an implement known as a "twitch" held on the nose or ear by the assistant. The loose skin just back or in front of the fore-shoulder are most suitable places for injection. It is also easy to introduce the toxine intravenously by compressing the external jugular vein, and thrusting the needle into the distended vessel.

The immunization of five horses for the Massachusetts State Board of Health was begun in the second week of December, 1894. During the first month of the inoculations the animals exhibited essentially similar and uneventful clinical histories. The initial dose of one-half the normal toxine unit was gradually increased every other day until at the end of four weeks fifteen units were injected. Up to this time no reaction of any sort was apparent. This gradual commencement seems justified by clinical and experimental analogy. The sudden introduction of diphtheria poison into the organism of an animal totally unused to such toxic shocks may be productive of tissue changes apparent only after the lapse of considerable time. I have repeatedly observed that a minute dose of toxine in a guinea-pig, scarcely sufficient to cause malaise, has been followed after two or three weeks by paralysis of the extremities, cachexia, and progressive emaciation. On these theoretical grounds, therefore, the attempt was made to avoid any marked reaction at the outset.

After the first month the animals began to show widely differing degrees of susceptibility. The clinical histories of two horses will illustrate respectively the extremes of tolerance and of sensitiveness.

A small mare of good appearance, with soft muscles, received fifteen toxine units at the end of the first month with absolutely no reaction. The doses were then rapidly increased twice a week till at the end of seven weeks she was receiving 500 units, at nine weeks 1,500 units, with slight local reaction, and a week later a dose of 2,500 units, with but slight local, and no constitutional symptoms. On March 5th a preliminary tapping was made, and the serum was found to possess an immunizing value of at least 1–50,000.

During the next two weeks 5,000 toxine units were introduced without ill effect, and on March 23d six litres of blood were withdrawn. The value of this serum was found to be not under 1–75,000. This strength had therefore been attained in a little over three months from the beginning of the inoculations.

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[2] A large stout glass cylinder is constricted abruptly at one end to a diameter of an inch, and this drawn out to a tapering extremity. A Pasteur filter is fitted by a rubber stopper to the constriction within the cylinder, and the tapering end of this adjusted to a filtering flask. When now the cylinder is filled with liquid, and suction applied to the filtering flask, atmospheric pressure forces the liquid through the porous porcelain, and the filtrate falls drop by drop into the filtering flask. As the level of the liquid in the cylinder falls below the top of the bougie, less and less filtering surface is at work. To obviate this disadvantage a large test-tube of such a diameter as to fit easily over the bougie is filled with the liquid, and by a sudden movement inverted over the bougie, its lower end resting upon the projecting shoulder of the bougie. The bougie is thus surrounded by a column of fluid which is sustained by atmospheric pressure.

The remainder of the fluid is now poured into the cylinder and air exhausted from the filtering flask. Filtration now proceeds with the whole of the filter actively at work, until the last few cubic centimetres of liquid in the cylinder are reached and the level sinks to the bottom of the test-tube. Bubbles of air are then drawn into the test-tube, the column in it falls, and the filtration is complete. The apparatus admits of ready sterilization in separate pieces, and is exceedingly easy to manipulate. The filtering flask may be connected by a Y-fork with a glass tube inserted into a bottle of mercury, thus enabling one to judge, by the height of the column of mercury in the tube, of the amount of vacuum obtained. I have found an air pump more satisfactory than the water aspirator. By interposing a large stout bottle between the air pump and the filtering flask a single exhaust will produce a vacuum sufficient to filter a litre of toxine.

In contrast with this rapid immunization, another horse equally sound, but more irritable and difficult to handle, began to experience at the end of the first month after each dose of 15 units, local swelling lasting several days. At six weeks 100 units were followed by considerable swelling lasting a week. At the end of two months 500 units were followed by enormous swelling of the fore-shoulder, with general edema of the whole extremity. In a week this had gone, and a repetition of the dose was followed by much less reaction. During the third month injections of 1,000 units were followed by very hard indurations about eight inches in diameter, each requiring for subsidence about ten days. The injection of 3,000 units at the end of four and a half months was followed by enormous reaction, a rock-like induration eighteen inches across, with sharply defined edges, showing no tendency to central softening or suppuration, disappearing after three weeks irregularly, leaving several discrete masses which finally vanished. Then 4,000 units excited but moderate reaction, which disappeared in a week.

The horse was tapped at the end of five months and a half, and showed a serum of the strength of [illegible]–75,000.

Between these two extremes the intermediate spaces could be filled in by the histories of the other animals. A detailed account would involve much repetition, and it seems preferable to state in the form of a summary the phenomena which have been observed.

In the first instance the local reaction appears to stand in direct relation to the susceptibility of the animal at the moment of injection. In a sensitive animal an injection of toxine is followed by a pronounced reaction lasting from a few hours to several weeks. If the injection is made into the subcutaneous tissue the tumefaction is soft and of the nature of an edema, while if made into the muscle it is firm, at times of rocky hardness. This swelling may remain small, being not more than two or three inches in diameter, or it may increase in size, attaining a diameter of two feet or more, extending beyond the shoulder and even travelling along the trunk as a well-defined edematous area. A reaction of this extent is generally sufficient cause for grave anxiety. These extensive reactions are especially apt to occur after an animal has been bled and his powers of resistance consequently diminished. It is common for a horse which has shown no especial sensitiveness during the process of immunizing to manifest, after tapping, a marked reaction from the injection of one-half or one-quarter of the amount previously given without ill effect. Furthermore a horse which has begun to lose weight may, if the injections are continued, unexpectedly develop one of these pronounced and serious disturbances. These local reactions may be complicated by the entrance of foreign bacteria. Abscesses have occasionally formed and healed after evacuation without untoward incident. A more serious event occurred in a horse which had been immunized rapidly and easily. After the second tapping, an injection of 2,500 toxine units was followed by enormous firm swelling of the fore-shoulder, edema of the extremity and neighboring portion of the trunk, death supervening in four days without characteristic symptoms. Incision into the tumefaction at the shoulder showed at the depth of an inch below the skin a collection of reddish serous fluid and large quantities of foul-smelling gas. Undoubtedly some foreign organism had gained entrance and found a suitable field for development in the exudation consequent upon the injection, but from lack of facilities for anërobic cultivation its nature was not determined.

Constitutional disturbances have been much less pronounced than might be expected. Even with the most severe local reactions no general symptoms could be perceived beyond a loss of appetite and spirits. In one instance, however, the intravenous injection of toxine was followed by pronounced effect. A horse that received without ill effect 3,000 units subcutaneously, exhibited on the introduction of an equal amount into the jugular vein, in the course of half an hour, sweating, trembling, faintness, and loss of appetite. The symptoms passed off in a few hours, and the horse appeared as usual by the following morning.

This procedure appeared to be attended with some risk and was not repeated.

The process of tapping is comparatively simple, and may be completed in fifteen minutes. One or two assistants, skilful in the management of horses, are needed. The animal submits most readily to the operation if not confronted with elaborate preparations for securing him. He is backed into a short narrow stall, so arranged that his neck protrudes from it, and he is unable to move sideways or backwards. The head is firmly held, a rope is passed around the neck low down and a wedge thrust beneath the rope so as to compress the external jugular vein, which is immediately seen to stand out for several inches below the angle of the jaw. A syringeful of two-per-cent. cocaine is injected over the vessel where it appears most superficial, and a short incision made, exposing it. It is generally recommended to thrust a trocar into the vein and conduct the blood into a jar through a rubber tube. I have found it more simple and expeditious to incise the vein directly; the blood then spurts in a steady stream for several feet. The receiving jar is placed close to the incision, and the blood allowed to flow into it without splashing, which is apt to alarm the horse. When four to eight litres are collected, the tourniquet is withdrawn, and the flowing generally ceases. To insure safety a pin is thrust through the skin flaps, which are then brought together by a thread in figure-of-8 loops. The horse is not allowed his head for a day, but is fed from a rack to avoid the danger of hemorrhage.

The amount of serum that separates is dependent upon the completeness of the contraction of the fibrin in the clot. If the clot adheres to the sides of the jar, contraction of the fibrin is prevented, and at the end of several days the clot is still firm, and but a few drops of serum have separated. If, however, the clot is separated from the sides of the jar, contraction immediately begins with a simultaneous forcing out of serum.

The one factor that more than any other promotes contraction of the clot, is the presence of a large surface in proportion to the volume of blood. Thus a jar, half filled, yields proportionately more serum than one entirely filled. The some point is shown by the fact that a partially-filled jar, in which the blood has coagulated at a sharp incline, yields more serum than the same amount of blood coagulated in an upright jar.

After many experiments the following method was found to yield the most satisfactory results. Cylindrical jars of one litre capacity are used, and vaseline is thoroughly applied to the interior to prevent adhesion of the clot to the sides. A large test-tube filled with cracked ice, closed at the top by a perforated rubber stopper, is placed in each jar before receiving the blood. When filled the jar is placed on ice, and the blood slowly coagulates, becoming a firm mass in the course of several hours. The test-tube is then withdrawn from each jar, leaving a cylindrical deficiency in the clot. At the end of twenty-four hours the result is striking. The clot has shrunken to a soft, flabby mass, and is surrounded by abundance of clear yellow serum. This is removed by carefully pouring off, and constitutes about two-thirds of the total amount obtainable. If the jars are placed on the ice another twenty-four hours, about one-third more may be obtained. This remainder is colored by solution of pigment in varying degrees, but is equal in all therapeutic qualities to the first yellow serum. The strength is ascertained by either the French or German method. The former was adopted at the beginning of the work, but I have recently come to regard the latter as more scientific and accurate.

The serum is next passed through a Pasteur filter to ensure sterility, and the filtrate shaken with the chloroform-thymol solution previously mentioned. It is, however, not allowed to stand long in contact with an excess of the solution, since a precipitate readily forms, but is immediately transferred to sterilized bottles, and aseptically sealed, being then ready for use.

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DIPHTHERIA AND THE ANTITOXIN TREATMENT.[1]

BY W. F. ROBIE, A.B., M.D., BALDWINVILLE, MASS.

THE current medical literature is super-saturated with antitoxin. Many times are given the mode of manufacture, the experiments on the lower animals, the way of using for diphtheria in children, statistics showing the results of its use and its probable great value as a remedial and preventive agent. Little is said in connection with all this of the comparatively new science of bacteriology of which antitoxin is the last and greatest discovery and the greatest achievement. From lack of experience I am not at all fitted to discuss the advantage of the new over the old treatment for diphtheria. I am but little better prepared to give briefly the facts in the science in the order of their discovery, which have made antitoxin possible. This latter, however, I have attempted to do, feeling the need of renewing my acquaintance with some of the elementary facts in bacteriology and feeling the need of gaining at least an understanding of the most important parts of the recent work in this line, hoping all the time that some of you, perhaps all, feeling this need to some degree, may be interested in following me. I shall give, at the out-start, some definitions which seem to me to be so axiomatic as to need no discussion or qualification. If you are disposed to argue them, their brief statement may seem dogmatic; if you already know them, it may seem unnecessary that they are stated at all; but this seems to me to be the only way to present the whole subject briefly enough for this occasion.

Bacteriology is the science of bacteria. Bacteria, or germs, are microscopic members of the vegetable kingdom. There are several principal varieties, classed according to their form: micrococci, or round bacteria; bacilli, or rod-shaped; spirilia, or spiral-shaped. Streptococci, or round bacteria connected like the links of a chain; diplococci, or round bacteria in pairs; and staphylococci, or round bacteria clustered like grapes, are various arrangements of micrococci. Some bacteria live in the air, are aërobic; some live in the absence of air, are anaërobic; some thrive on dead matter, are saprophites; some thrive on living matter, are parasites. An obligate saprophite is obliged to live on dead matter; "their number is unlimited and they are the scavengers of creation." A facultative saprophite has the faculty of living on dead matter under favorable circumstances, though by nature parasitic, for example, the tubercle bacillus of Koch. An obligate parasite is obliged to live on living matter, for example, the germs of syphilis and leprosy; and a facultative parasite has the faculty of living on living matter, for example, the anthrax bacillus.

Bacteria multiply in two ways: (1) By fission, which is simply division, one bacterium forming two or more. Bacteria multiplying in this way are quite readily destroyed. (2) By spores, in which the spore or bud develops at some part of the parent bacterium, and when sufficient development is reached becomes detached from the parent. Bacteria multiplying in this way are destroyed with difficulty.

Pathogenic bacteria cause disease. Non-pathogenic bacteria do not cause disease. Many diseases are caused by bacteria. To prove that a given bacterium produces a given disease we must conform to the four rules of Koch, and show (1) that the bacterium is present in every case of the disease; (2) we must isolate the bacterium; (3) we must produce the disease in healthy animals by inoculating them with this bacterium; (4) we must then find the bacteria growing and working the special changes in these animals.

Diseases already proven to be caused by bacteria are tuberculosis, tetanus, anthrax, glanders, progressive edematous gangrene, gonorrhea, croupous pneumonia, diphtheria, etc. Diseases practically proven to be caused by bacteria are typhoid fever, Asiatic cholera, malaria, influenza, etc. Diseases which we have many reasons to believe are caused by bacteria are syphilis, leprosy, meningitis, erysipelas, septicemia, puerperal fever, measles, scarlet fever, whooping-cough, small-pox, yellow fever, etc.

Different bacteria produce different products, some poisonous, some non-poisonous. The tubercle bacillus produces tuberculosis. The Klebs-Löffler bacillus produces diphtheria. The yeast plant or germ produces alcohol. It was early observed, that, in this latter case, when the yeast plant had formed a twelve-per-cent. solution of alcohol, the plant died and made room for the germ which produces acetic acid. In time this germ died and another took its place, and so on, each germ being destroyed by a poison formed by itself.

From these and other observations a truth has been discovered, namely, that every living thing, plant or animal, may be poisoned by the products of its own metabolism. This fact has been the basis of the bacteriological treatment of disease. After many theories and much contention it has been settled that bacteria produce disease by forming, in the process of their life changes, poisonous chemical compounds. Some years ago certain of these were isolated and they were named ptomaïnes or putrefactive alkaloids. After a time it was discovered that other poisons were formed, more obscure in nature but much more virulent than the ptomaïnes. In recent years much time has been spent in attempts to discover these unknown poisons, and Hankin, an Englishman, succeeded in isolating the first poisonous albumin of known bacterial origin from cultures of the anthrax bacillus, though poisonous albumins had been discovered some time previously by Mitchel and Reichert. Many of these albuminoid bodies have now been isolated; and, though little is known of them, we know that they are all intensely poisonous and that they will, when injected into an animal, cause some or all of the symptoms of the disease of which the germ from which each albumin is derived is the cause. Such is the toxin of diphtheria.

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[1] A paper read before the Miller's River Medical Society.

It has long been known that some animals are not susceptible to certain diseases, and that some diseases, particularly the acute infectious diseases, leave the one that has suffered from them proof for a longer or shorter time against them. It had been known since antiquity that one attack of small-pox gave immunity against subsequent attacks; and when, in 1795, Jenner discovered vaccination, this gave rise to much thought and experimentation for the purpose of finding out in what way vaccination gave protection against small-pox. To make the question general, Wherein is the power which protects one animal from a disease which other animals are subject to, and what is the reason that one attack of certain diseases confers immunity against subsequent attacks? At first a partial explanation was based on the fact that certain cells — leucocytes or phagocytes — were more numerous in one animal than in another. These cells were thought to be so numerous in some cases that they could absorb all the poison or destroy all the bacteria which gained admittance to the body. Later, the blood of some animals not susceptible to anthrax was freed of all cells of every kind, and the fluid was found to kill the anthrax germ. In the case of animals susceptible to the disease the germs would thrive on the fluid elements of their blood. This proved that the germicidal properties are present chiefly in the fluid elements of the body. When this fluid was heated to 60° or 70° F. all germicidal properties disappeared at once. The fluid being largely albuminous, it was conjectured that the heat had coagulated the albumin, and that this albumin in its natural state had been the protective element.

It is now proven beyond a doubt that the albumins or albuminoid substances possess this protective power, or, in other words, the susceptibility of an animal to a germ disease depends upon the relative amount of certain albumins in the blood. Acting on the generally known fact that one attack of an infectious disease gives immunity for a longer or shorter time against the disease, the foremost investigators sought to give protection by producing in the person a mild form of the disease, just as, for centuries, people had sought to avoid a severe attack of small-pox by inoculating themselves with the poison during a mild epidemic.

Pasteur secured immunity in fowls against chicken-cholera. He allowed the bacteria to grow on gelatine in a tube to the thirtieth generation. He then injected into the tissues of the fowl this modified form of the bacterium, and produced a form of the disease so mild as to be entirely without danger, but sufficient to protect against future attacks of the disease. He tried to produce immunity against anthrax in the same way, but failed. Later, by allowing the bacterium to grow at a temperature above 42° C. to the twenty-fourth generation, he obtained a substance which he called primary vaccine, which, when injected beneath the skin of the animal, produced a slight effect. He followed injections of this in a few days with injections of a secondary vaccine, or what he obtained after allowing the bacterium to grow to the twelfth generation, and this gave protection against the inoculation form of the disease. His next experiments were for the purpose of finding a protection against hydrophobia. Knowing that the lesions of the disease were in the brain and spinal cord, he made an extract of the fresh cord of an animal dead from hydrophobia, and injected this extract beneath the skin of another animal. This produced the most virulent form of the disease. He finally secured a protective vaccine in this way. He dried for forty days, in the air, the spinal cord of an animal dead from this disease. The cord of another dead from the same disease he dried thirty-five days; of another, thirty days; and so on. He then made separate extracts of the dry cords. He then injected beneath the skin of the animal which he wished to protect some of the extract of the cord that had been dried forty days; in a few days he injected some of the extract of the cord dried thirty-five days; and so on, till at last he injected an extract of fresh cord. The animal was thus accustomed to the poison and, after the last injection, was proof against the disease. This is the principle of the successful preventive treatment of hydrophobia used at the Pasteur institutes in Europe and in this country.

Brieger isolated from cultures of the tetanus bacillus a toxine which, when injected, produced the symptoms of the disease. An antitoxin has also been discovered in the blood of animals which have had the disease. If such blood be injected into animals suffering from tetanus, if it be early enough in the course of the disease, they will get well. It will also confer immunity against the disease in the animal receiving it.

Many other experiments have been conducted on these lines, with varying results; but by far the most sensational and the most widely known were those of Robert Koch, with the substance known as tuberculin. Precisely the same principle is involved here, and the tuberculin is made by growing the tubercle bacillus under unfavorable conditions, in the presence of moisture or under pressure or with varying degrees of heat and cold. The culture is filtered, and the filtrate is the tuberculin. In treating some diseases or in conferring immunity against them, it has been the custom to inject a modified culture of the bacillus, thus allowing the bacillus to grow and to develop in the organism, making the changes in the blood which would render the person immune; and in some diseases, not the bacteria themselves but a modified and weakened form of the poison obtained by filtering a culture of the organism is repeatedly injected until the system becomes saturated with the poison. Then if the bacteria gain admittance they cannot live, or, if they are already present, they are destroyed by the antagonizing power of the poison. Koch followed the latter method, and the fact that the remedy has failed to meet his expectations and those of the medical profession, and that it did, for a time, apparently place discredit upon the whole science of bacteriology, was not due to wrong methods but to the nature of the disease with which he had to deal. Tuberculosis is characterized by the formation of a degenerate form of tissue known as tubercle. Tubercles are full of the characteristic bacilli constantly producing their poisons. Tubercles are continually breaking down and the dead tissue, mingled with the poisons formed by the bacilli, goes into the circulation, producing the constitutional symptoms — exhaustion, emaciation, hectic fever, etc. When there is injected a poison like tuberculin, though it may be directly opposed to the poisons in the system and able to destroy the pre-existent poisons under proper circumstances, will it not, since it must cause a reaction and a sloughing of more tissue and cause the blood to be more completely saturated with the very elements, dead tissue and the germ-produced poisons, which had brought on the constitutional symptoms of the disease in the first place — will it not, in reason, often cause an increase in these symptoms and, at times, collapse? At any rate such has been the case, and, though tuberculin has been classed as a failure as a cure for tuberculosis, it has shown to scientific workers the limitations of the old bacteriological methods of treatment and has awakened the most enthusiastic efforts to find a safer and more sure treatment involving the same fundamental principles but going one step further. It was found to be a dangerous process to antagonize in the human system the growth of poisonous bacteria by the introduction of poisons deadly to the bacteria.

I will re-state that the germicidal elements in an animal are chiefly in the blood. An animal can be made proof, for a time at least, against a bacterial disease by having the disease and recovering; for the bacteria produce and leave in the blood the poisons which are deadly to themselves; or we may accomplish the same thing by giving the animal subcutaneous injections of the poison made by the bacteria in the course of their growth upon various culture media. Both of these methods are, as we have seen, at times dangerous. Fränkel first secured immunity against diphtheria by injecting beneath the skin of animals a substance prepared from cultures of the bacillus.

Behring, the discoverer of antitoxin, began his experiments some years ago. While I was in the medical school I learned that he had isolated two albuminoid substances from cultures of the Klebs-Löffler bacillus; and that he had found that ordinary cultures of the diphtheria bacillus heated to 60° or 70° F. and then injected beneath the skin of animals had the power of conferring immunity; and that he had also found that the addition of iodine trichloride to old cultures of the bacillus also gave immunity when injected subcutaneously. If he had stopped here, we should have had for diphtheria a remedy analogous to tuberculin for tuberculosis; but he went one step further. He injected subcutaneously the poison or toxine made from cultures of diphtheria bacilli into various animals. Large quantities injected at first would kill the animal, but small quantities repeated from time to time would be borne, and after a time the animal became accustomed to the poison and larger doses could be used. This was kept up for months. Then blood was taken, and the serum was injected into animals suffering in varying degrees from the diphtheritic poison, or into animals exposed to the poison. He found that animals which had received injections of this blood serum in sufficient quantities would not develop diphtheria under any circumstances for some time after the injections. This immunity would always be temporary, but would last from several days to several weeks, according to the amount of serum injected. The amount of serum which would protect a guinea-pig would not protect a rabbit. This showed that the serum did not destroy the toxine, but either rendered the cells of the animal insensible to its action or made their power of resistance to it greater. When the poison was injected alone, there were diphtheritic symptoms and death. When a mixture of serum and poison in right proportions was injected, there was no effect, or but a slight fever. When the poison was previously injected and the disease well developed, recovery generally resulted if the serum was injected repeatedly.

To approach as nearly as possible to diphtheria in the child, Roux and others inoculated the mucous surfaces of various animals with the germs of diphtheria. Practically the same results were obtained. When serum was injected before inoculating with the germ there would be local redness, fever and some general disturbance; but no membrane would be formed. When the serum was injected after the formation of false membrane, the swelling began to diminish in a few hours; the fever abated on the following day in moderate cases — after repeated injections in severe cases — and the false membranes were detached during the first or second day. When the trachea of a rabbit was inoculated with the bacilli of diphtheria, there was, within forty-eight hours, fever, false membrane formed and difficult breathing. If the serum was injected before the germs, there were none of these symptoms; or if it were injected in too small quantities, there were late symptoms. If the serum was injected after the membrane was developed, the disease was arrested. When streptococci and other toxic bacteria were present with the diphtheria germ, the disease as had been previously noticed by others, was found to be more severe, as the diphtheritic poison was increased, and there was a tendency to broncho-pneumonia. If the serum was injected early after the mixture of diphtheria bacilli and streptococci, a portion of the animals were saved; but if there was much delay the disease terminated fatally.

In preparing the serum for man the horse was found to be the best animal to accustom to the poison or toxine. Young and healthy animals are selected; and they are so little susceptible to the toxine that there is little danger of killing them if moderate care is taken. The toxine is prepared by growing the Klebs-Löffler bacilli in a medium of peptonized broth. The cultures are made in flat-bottomed glass flasks into which a current of moist air is passed. The temperature must be 37° C., and the time required is at least three weeks. The cultures are then filtered, and the filtrate, to which is added a little camphor, is the toxine ready for use. From two to five cubic centimetres of this are used as an initial dose. A larger dose proportionately can be used if the trichloride of iodine is mixed with the toxine. This is injected subcutaneously. The horse is given another dose in a few days and the amount is gradually increased until he can bear large quantities of the poison. Four months or more is necessary before a very active serum can be obtained. Then blood is drawn from the jugular vein, and the serum separated from the other elements. When a little trikresol is added to it, we have the antitoxin ready for use.

The serum obtained from the horse is now tested as to its strength. It is first found how much toxine is necessary to kill an animal of a known weight. Then it is found how much antitoxin is needed to bring about a good recovery, or to neutralize the effects of the toxine in an animal of the same weight. The amount of the antitoxin taken, divided by the weight of the animal, gives the strength of the antitoxin; for example, if one cubic centimetre is used and the animal weighs 1,000 grammes, the strength of the solution is 1 to 1,000, or one part of serum to one thousand of body weight is needed for a curative dose.

In treating diphtheria in man the serum is injected into the tissues of the flank or between the shoulders. A large hypodermic syringe is used, preferably one made with fittings of asbestos and linoleum, and holding from 10 to 20 c. c. Before using, this should be sterilized by boiling. The serum should all be injected in one place, and there should never be massage of the part after the injection. Different operators use a different initial dose. As the serum varies so much in strength, it is hard to tell the dose unless the strength of the serum is known. For a child moderately sick, 10 c. c. of the stronger serum seems to be the most common dose; for one seriously sick, 20 c. c. If no improvement is noticed the dose may be repeated in twelve hours, and in some cases the amount is increased. One child received 125 c. c. of the serum with no bad effect.

Diphtheria, as you all know, is an acute infectious disease caused by the action of the Klebs-Löffler bacillus. It is primarily a local disease, cell proliferation and fibrous exudation brought about by the action of the bacillus at the point of invasion going to such an extent that death often results from the mechanical closing of the air-passages. It is secondarily a constitutional disease, the poison formed by the bacillus entering the system and producing many serious consequences — albuminuria, heart-failure, paralysis, etc., and often death. The treatment, formerly expectant and symptomatic, has, in recent years, been rigidly antiseptic and symptomatic. Under the latter treatment are included antiseptic washes and sprays locally, such as hydrogen peroxide, bichloride of mercury, boracic acid, etc., intubation or tracheotomy when necessary, perfect rest, liquid diet, empirical agents, such as mercury in some form and tincture of the chloride of iron, and tonics and stimulants in every form. Under the old treatment the mortality was terrible, varying from 50 to 90 per cent.; under the later treatment, though somewhat reduced, it was very high, varying, in general terms, from 30 to 70 per cent.

So far, under the treatment by antitoxin, we have the almost universal testimony to the following remarkable results. If the disease has not advanced too far, the false membrane ceases to spread within twenty-four hours after the time when the antitoxin is injected, and the membrane becomes detached within forty-eight hours, as a rule. Therefore, tracheotomy is less often necessary, intubation for twenty-four hours usually being all that the worst cases require. In mild cases the temperature falls very rapidly the day after the injection. In severe cases it begins to fall after the second or third injection and continues to fall slowly. The pulse-rate is lessened, but the action on this is slower than on the temperature. The albuminuria is much less frequent than with any other treatment, and when present is much milder in character. The other complications and sequelæ are more rare and less apt to prove fatal than with any previous treatment.

I have not time to discuss at length the statistics so far obtained. That we must put some confidence in them is certain from the character and scientific reputation of the observers. Some have used the serum in severest cases only. Some have used it in all cases. But all the statistics given, or nearly all, are for cases of true diphtheria, as proven by the presence of the Klebs-Löffler bacillus, and many had complicated with this germ the staphylococcus pyogenes or a streptococcus. These complications are known to be more severe than when the diphtheria germ alone is present. Statistics have appeared in the best medical journals above the signatures of reliable observers, and we have every reason to believe that each observer has made an accurate record of his work. Still the time has been too short to allow of our fixing definitely the future status of antitoxin at this time.

With this history of the progressive work in this wonderful new science of bacteriology before us, and with these eloquent figures, shall we not believe that there has been discovered the germ, at last, of all future treatment for diphtheria and all allied diseases? Reasoning from analogy, shall we not believe that, in the near future, the tuberculin of Koch, or some similar substance, will be used to immunize animals, and that their blood serum will be used in the prophylaxis and in the treatment of the early stages of tuberculosis in man? I believe the time is not far distant when, so far as the germ-produced diseases are concerned — and these diseases will then have been proven to be by far the most numerous and the most dangerous — we shall have, as our homeopathic friends now have, explicit directions in regard to the use of a certain remedy in certain proportions for a certain disease — not in such infinitesimal quantities that the wildest imagination can hardly conceive of the remedy as being present at all, but in definite quantities of a known strength, which will give a definite, satisfactory result when the disease is recognized and the remedy applied in time.

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Medical Progress.

REPORT ON CHEMISTRY.

BY WILLIAM B. HILLS, M.D.

ALBUMINURIA.

GLOBULIN is usually associated with albumin in the urine. According to Boyd[1] the proportion varies so much that it is not possible to determine the variety of kidney disease by means of it. Even in amyloid degeneration, the globulin may not be in excess. In the albuminuria of pregnancy, the globulin is present in larger amount than in other forms of albuminuria. In the albuminuria of heart disease, the globulin is usually more abundant than in chronic interstitial nephritis. In acute nephritis, without hematuria, the two proteids are about equal; but when blood is present the globulin is proportionally more abundant.

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[1] Journal of the Chemical Society, London, March, 1895, ii, 82, from Rep. of Lab. R. C. P., Edin., 1894.

Four cases of Bright's disease are recorded in which serum albumin was present, but serum globulin absent, or present only in merest traces; and one case where globulin and albumoses were present, but albumin absent. In no case did the proteid quotient bear any relation to that of the blood. The amount of proteid is often greater than that found in transudations. From these considerations, the presence of proteid in the urine is considered to be due to secretion rather than transudation, and there is some evidence that the lower the state of nutrition of the renal epithelium the greater is the amount of globulin allowed to pass. In this investigation, the total proteids were estimated by boiling, the albumin by boiling after removal of the globulin by half saturation with ammonium sulphate, the globulin by difference.

PEPTONURIA.

H. Senator's[2] investigations lead him to the conclusion that peptonuria is almost invariably a symptom in croupous pneumonia, as well as in purulent meningitis; less frequently in articular rheumatism; never in leukemia. The author concludes that the proteids secreted in the condition commonly called peptonuria are not true peptones, but albumoses. In one case the proteid was, apparently, proto-albumose, in a second, deutero-albumose.

W. Robitschek[3] finds that the urine contains peptones in many diseases, especially during suppuration, and also in phosphorus poisoning.

L. Sior[4] has never detected true peptones in the urine of children.

NUCLEO-ALBUMIN.

Dr. Sarzin,[5] working under the direction of Senator, examined 200 urines for nucleo-albumin, with a negative result. The urine of women was avoided, as the presence in such of vaginal secretions might be a source of error. The author does not, however, deny the possibility of the occurrence of nucleo-albumin in the urine in rare cases; for example, in cases in which there is extensive disintegration of the renal epithelium.

URINARY PIGMENTS.

According to Saillet,[6] normal urine contains a pigment, which he has named *urospectrin*. Its solutions in ether and in alkalies give four absorption bands; acid solutions give two bands. It is similar to hematoporphyrin, but differs from it in some respects. It may be extracted from the urine as follows: the urine is shaken with acetic ether, which removes about two-ninths of the coloring matter of the urine. The residue left upon evaporation of the acetic-ether extract is soluble in ether. The solution is more complete if the extract is protected from the action of light. The ether extract contains the chromogen of urobilin, and the new pigment. Upon exposure to light, the urobilin chromogen is decomposed, and the urobilin may be removed by shaking with water.

Renewed research by Garrod[7] confirms his previous conclusion that hemotoporphyrin is a scanty but normal constituent of the urine. Twenty cubic centimetres of a ten-per-cent. solution of sodium hydroxide are added to every 100 c. c. of urine; the precipitated phosphates are collected and washed with water. The precipitate is dissolved in rectified spirit and acidified with hydrochloric acid; the solution shows the bands of acid hematoporphyrin. Ammonia is then added to precipitate the phosphates, and acetic acid to redissolve them; chloroform then extracts the pigment completely, and shows the bands of the alkaline pigment.

For the estimation of urobilin in urine, A. Studensky[8] recommends a process which consists in extracting the urobilin by means of chloroform in the presence of copper sulphate and ammonium sulphate, and in the colorimetric comparison of the colored chloroform solution of urobilin with standard solutions. If the urine to be examined be shaken with chloroform in the presence of copper sulphate, the urobilin will not be entirely dissolved until after repeated shakings. If, however, after the addition of the copper sulphate, the urine be saturated with ammonium sulphate, which precipitates urobilin, the whole of the latter is at once taken up by the chloroform. Without copper sulphate, only a portion of the urobilin is dissolved. The process is carried out in the following way: twenty cubic centimetres of urine are treated with one-tenth solution of saturated copper-sulphate solution, then saturated with crystallized ammonium sulphate, and 10 c. c. of chloroform added. The mixture is shaken for some minutes, and as soon as a copper-red layer of chloroform solution has settled, a portion of it is removed by a separating funnel, placed in a test-tube, and compared with a standard solution of urobilin in chloroform. This solution is prepared by extracting a considerable amount of urine which contains much urobilin in the manner described, evaporating the chloroform solution to dryness, washing with ether, and weighing the residue. A series of solutions is then made up from this residue, and these may be preserved, even as long as two months, if kept in the dark in closed vessels and covered by a layer of saturated solution of ammonium sulphate.

ALCAPTONURIA.

H. Embden[9] contributes a paper which relates to certain experiments on metabolism, performed with a view of testing the correctness of the hypothesis that homogentisic acid originates by an unusual form of metabolism from tyrosine.

The first experiments were performed on a patient alluded to in a previous publication of the author. It was found that the acid in the urine was increased by a flesh diet; that the administration of tyrosine doubled the excretion of the acid; that phenylacetic and phenylamidoacetic acids had no such influence; that oil of turpentine, kephir, and castor oil, although lessening the combined sulphates of the urine due to lessened putrefaction in the alimentary canal, had little or no influence on the amount of hemogentisic acid. On administering the acid by the mouth, about 75 per cent. was excreted in the urine. Another point noted in the urine of this patient was an abnormally low excretion of uric acid.

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[2] Centralblatt für die medicinischen Wissenschaften, 1895, page 467.

[3] Chem. Centr., 1894, page 780.

[4] Jahr. f. kinderheilk., 37, page 352.

[5] Centralblatt für die medicinischen Wissenschaften, 1895, page 413.

[6] Loc. cit., 1895, page 476; from Bull. de Thérap.

[7] Journal of the Chemical Society, London, 1895, ii, 55; from J. Physiol., 17, page 349.

[8] Loc. cit., 1894, ii, 171; from Chem. Centr.

[9] Loc. cit., 1894, ii, 23; from Zeitschr. physiol. Chem., 18, 304.

The second series of experiments performed on healthy men and animals showed that after the administration of the acid (by the mouth in man and by subcutaneous injection in dogs), the urine assumed all the characters of the urine of alcaptonuria, the amount of acid recovered in the urine being considerable, but, nevertheless, indicating that some had been destroyed in the living tissues.

CARBOHYDRATES OF NORMAL URINE.

Baisch[10] finds that the carbohydrates of normal urine are three in number: glucose, a dextrin-like substance (animal-gum), and a third, probably isomaltose. The quantity of glucose averages 0.005 per cent. The quantity of total carbohydrate, reckoned as glucose, is about 0.01 per cent.

DETECTION OF SMALL QUANTITIES OF SUGAR IN THE URINE.

A. H. Allen[11] recommends the following procedure: Seven to eight cubic centimetres of the urine are heated to boiling in a test-tube, and 5 c. c. of solution of copper sulphate, as used to make Fehling's solution, are added. This precipitates nearly all the uric acid, xanthine, hypoxanthine, phosphates, etc. When nearly cold, 1 to 2 c. c. of a saturated solution of sodium acetate are added, which will render the precipitation complete. After filtering, 5 c. c. of the usual alkaline tartrate solution are next added, and the mixture boiled for fifteen to twenty seconds. In the presence of more than 0.25 per cent. of sugar, separation of cupreous oxide occurs before the boiling point is reached, but with smaller proportions precipitation takes place during the cooling of the solution, which becomes greenish, opaque, and suddenly deposits the oxide as a fine orange-yellow precipitate. The best qualitative test for traces of sugar is, however, the phenyl-hydrazine test.

DETECTION OF BILE-PIGMENT IN URINE.

A. Jolles[12] has ascertained the relative delicacy of twenty tests. Of these, some half-dozen are so little adapted to the purpose that it is necessary to add 10 per cent. of bile to the urine in order to obtain them; and only one (Rosenbach's) of the six modifications of Gmelin's test is as delicate as the original. This requires five per cent. of bile. Two out of the list are so delicate as to be given by two per cent. Of these, Rosin's test is one, and Hupperts's the other.

RARE URINARY CALCULI.

Reported by J. Horbaczewski.[13] The first stone examined was a fatty concretion, and analysis gave the following result:

	Per cent.
Water	2.5
Ash	0.8
Organic matter insoluble in ether	11.7
Organic matter soluble in ether	85.0
The latter contained	
Free fatty acids	51.5
Fats	33.5
Cholesterol	traces

The organic matter insoluble in ether contained insoluble soaps of calcium and magnesium, and probably some blood proteid and mucin. The second stone was a cholesterol concretion. It contained

	Per cent.
Water	3.76
Ash	0.55
Organic matter	95.99
The organic matter contained	
Cholesterol	95.87
Organic matter insoluble in ether	0.15

ALKALOIDS.

Prof. T. G. Wormley[14] has contributed two valuable papers: One, "On Some of the Chemical Properties of the Mydriatic Alkaloids"; a second, "On Some of the Tests for Quinine." An abstract suitable for the pages of the Journal cannot well be prepared. Professor Wormley confirms the conclusion reached by others, that the alkaloids in general may undergo a slow and gradual change in the presence of decomposing animal matter. He finds that strychnine, under the conditions stated, after a time loses its property of responding to the color and certain other chemical tests, but still retains its bitter taste and the property of producing tetanic convulsions in frogs.

His experience leads him to believe that when morphine and strychnine are taken in moderate toxic quantity, that portion of the alkaloid which is carried to the tissues by the ordinary process of absorption, entirely loses its property of crystallizing, even when present in quantity sufficient to respond to chemical tests. When the morphine or strychnine is taken in excessive quantity, a portion seems to be distributed to the organs by simple exosmotic diffusion, and this may readily be recovered in the crystalline state. In a case in which 1.68 grammes of strychnine were administered subcutaneously to a dog during a period of four hours, in divided doses, so as to keep the animal paralyzed, 56 mg. of well-crystallized strychnine were recovered from the urine, 26 mg. from the liver, and 14 mg. from the blood.

CARBONIC-OXIDE POISONING.

G. Marthen[15] reports five cases, with clinical details. In all, the body temperature was elevated. As regards metabolism, the decomposition of proteids is enormously increased. There may be slight albuminuria. The pulse is like that of typhoid fever. The red corpuscles of the blood are increased considerably.

N. Gréhant[16] has studied the influence of time on the absorption of carbonic-oxide by blood. When a dog is made to breathe artificially a mixture of air and carbonic-oxide containing 100 c. c. of the latter in 100 litres, after half an hour the blood contains 6 c. c. of carbonic-oxide in 100 c. c.; after an hour, 9.2 c. c.; after two hours, 10 c. c.; and after two hours and a half, 9.3 c. c. With the proportion of carbonic-oxide specified, the volume absorbed by the blood becomes practically constant after an hour. With a mixture containing only 10 c. c. of carbonic-oxide in 100 litres, the law of absorption is different, and the proportion of carbonic-oxide in the blood gradually increases. After half an hour, 100 c. c. contain 1.42 c. c. of the gas; after an hour, 2.05 c. c.; after an hour and a half, 2.9 c. c.; after two hours, 3.15 c. c.; after two hours and a half, 3.6 c. c.

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[10] Zeit. physiol. Chem., 18, page 193; 19, page 339; 20, page 249.

[11] Journal of the Chemical Society, London, 1894, page 488; from Analyst, 19, 178.

[12] Loc. cit., London, 1894, ii, page 171; from Zeit. physiol. Chem., 18, 545.

[13] Loc. cit., London, 1894, ii, 24; from Zeit. physiol. Chem., 18, 335.

[14] American Journal of Pharmacy, pages 13, 561.

[15] Journal of the Chemical Society, London, 1894, ii, 360; from Virchow's Archiv, 136, p. 535.

[16] Loc. cit., from Compt. Rend., 118, 594.

CHLOROFORM.

P. Vitali,[17] employing the very sensitive process given below, found, in some cases, traces of chloroform in the urine, after its administration as an anesthetic. A current of pure hydrogen is passed through the urine, or any other liquid containing chloroform; the latter is thus carried off as a vapor, and on burning the hydrogen and allowing the flame to play on a piece of fine brass gauze, the wire assumed a bluish-white color. On drawing off the products of combustion from the gauze, and passing them through ammonia solution, a bluish coloration is obtained, and the solution is found to contain chlorine. The quantity of chloroform found in the urine after inhalation of the anesthetic is always very small, and in some cases none can be detected. After administration of chloroform, the urine always reduces the solutions of Fehling, Trommer, and Boettger. This is not due to the presence of sugar. The author's result is in agreement with those obtained by Kast, v. Mering, and Zeller, but opposed to those of Bréaudat.

ACTION OF DEFINITELY-RELATED CHEMICAL COMPOUNDS ON ANIMALS.

W. Gibbs and E. T. Reichert[18] propose, in this and succeeding papers, to recapitulate and summarize the results they have obtained in their investigation of this subject.

Starting from phenol, the authors find that the substitution of hydroxyl for hydrogen atoms does not materially change, but intensifies the physiological action, although position-isomerism exerts also a marked influence on intensity and sometimes even on the character of the action. With the phenols, those having the greatest reducing action have generally the greatest physiological action. The substitution of alkyl-radicles for hydrogen changes the mode of physiological action. The substitution of the nitro group for hydrogen tends both to change and intensify physiological action. With mononitrophenols the action is mainly on the circulation, and hardly at all on the nervous system, and increases from the ortho- to the para-compound. Further substitution of nitro groups increases the intensity of action. The nitro-benzenes are somewhat similar in action to the nitrophenols, but less powerful. The nitranilines all stimulate the peripheral ends of the vagi and alter the hemoglobin of the blood, but have little action on the nervous system; so that, in this case, the action of aniline (mainly nervous) is completely changed by the introduction of the nitro group. In the toluidines, the result of the introduction of methyl in the aniline is somewhat similar to that of the nitro group, reducing very much the action on the nervous system, and much increasing that on the vascular system.

A Check on the Exhibition of Freaks. — The Pennsylvania Legislature, at its session which recently closed, passed an act "prohibiting the exhibition of insane, idiotic, deformed or imbecile persons in any public hall, museum, theatre, tent or building for a pecuniary consideration or reward." The offence is punishable by a fine not exceeding $1,000 or imprisonment not exceeding six months.

Recent Literature.

Enlargement of the Prostate: Its Treatment and Radical Cure. By C. W. Mansell Moullin. Philadelphia: P. Blakiston, Son & Co. 1894.

This work is a most thorough and complete exposition of the subject of which it treats, and is prefaced by a concise description of the anatomy and physiology of the organ, in the course of which the author presents his own views, as well as those of the best authorities, upon the most important points connected with them. Of these we agree with the ground he takes in regard to the function of the gland, namely, that it is purely sexual, and that it only assists the the passage of urine by the mechanical support it gives to the urethra. In support of the view that the organ is sexual, the author adduces the following: "If castration is performed in early life, neither the glandular nor the muscular part of the prostate is developed; if later, the prostate atrophies; in neither case is micturition interfered with in any way. Dr. Griffiths has shown that in animals the size and perfection of the prostate rise and fall with the breeding season." He also refers to the evidence offered by embryology and comparative anatomy.

Amongst the anatomical points, the author confirms the view expressed by Sir Henry Thompson and others as to the existence of a distinctive median portion of the prostate, demonstrated by the existence of glandular structure in larger abundance than elsewhere in the organ. He states, however, that in many individuals the tubules which demonstrate the distinctive existence of this anatomical median lobe, or portion, are absent; in a few, on the other hand, they are so numerous and so large as to form a definite little mass thicker at its middle than at its borders. The pathological middle lobe has nothing to do with the above-mentioned anatomical median portion; the author considers, that in many instances, if not in all, it originates entirely independently of it.

The second chapter deals with the histology, rate of growth and so forth. Histologically the author considers the prostatic enlargement to be essentially a fibro-adenomatous growth, and not a true hypertrophy.

The influence of the enlargement of the gland upon the urethra is interestingly and well described: "So far as the lower half is concerned, the lateral lobes are the dominant force. If they are enlarged the urethra is compressed, from side to side, and slightly elongated." We do not agree with the last part of this statement, and believe that the elongation of the prostatic urethra is chiefly due to the enlargement of the lateral lobes. A comparison is made of the observations of Sir Henry Thompson, Dittel, Watson, Vignard, and the author, as to the relative frequency of the various forms of prostatic enlargement, which is interesting as showing practical agreement of all but one of them (Vignard) as to the large percentage of cases in which the median portion is the chief obstacle to urination.

With relation to the causes of prostatic enlargement we are glad to note that the author objects to as untenable all the theories hitherto advanced to explain its occurrence, three of which only are discussed by him: that of the analogy of the disease to uterine fibroids, supported by White and Thompson; that of Guyon who holds that the disease is always associated with, and a manifestation of, general anterio-sclerosis; and that of Reginald Harrison, who considers the enlargement of the gland as a secondary and compensatory development following upon changes of the bladder. Moullin's statement, that we have no satisfactory explanation of the cause of the disease we are entirely in accord with. The author cites ten cases of typical prostatic hypertrophy occurring at various ages from fifty-three to twenty-seven years, to show that the disease is not invariably associated with old age. At the end of this chapter upon causation there is a short reference to the interdependence and intimate relation between the development of the testes and the prostate.

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[17] Journal of the Chemical Society, London, 1894, ii, 149; from L'Orosi.

[18] Loc. cit., 1894, ii, 393; from Amer. Chem. Journal, 16, 443.

We have not sufficient space to more than mention the many interesting views of the author upon various special matters connected with the subject, which he presents in a clear and interesting manner throughout the work. We would call special attention to the discussion of the secondary effects of the disease upon the bladder and kidneys, and to the methods of instrumental measurement of the urethra and prostate. The chapters upon treatment are particularly full; and this part of the subject is thoroughly treated in all its aspects, including the most recent advances made, amongst them that of castration. The book is certainly one of the most noteworthy and valuable that has been written upon the subject, and should receive careful study at the hands of the profession, to whom we cordially recommend it.

Ectopic Pregnancy: Its Etiology, Classification, Embryology, Diagnosis and Treatment. By J. Clarence Webster, B.A., M.D., F.R.C.P., Ed., Assistant to the Professor of Midwifery and Diseases of Women and Children, in the University of Edinburgh. With 80 Illustrations of Naked Eye and Microscopic Appearances. New York: Macmillan & Co. 1895.

This volume of nearly 250 pages is devoted solely to the consideration of ectopic pregnancy, and is a very timely contribution to a subject which has been of the first interest of recent years, and has provoked the production of a vast number of fugitive articles, but has not up to this time received so exhaustive a consideration in any single work. The author is especially successful in the treatment of the scientific side of his topic.

The chapters on the varieties and development of ectopic gestation are of extreme interest, and are the more valuable in that they are largely derived from an extensive individual experience, both operative and post-mortem. The chapter on the symptoms and signs is interesting; that on diagnosis is perhaps open to the criticism that while it is given in detail it is a little wanting in conclusiveness and does not add as much to one's previously acquired clinical picture as might have been hoped from the author's wide experience. The concluding chapter is devoted to treatment. It gives an outline of the form of treatment which the author recommends for every variety of the abnormality in question. It is evident that no single chapter could give more than the briefest outline of so extended a subject, but we could have wished that the author had written this chapter *in extenso*, even though it had doubled the size of his book.

The eighty plates and illustrations are admirable. The book is attractively printed, and is to be warmly recommended.

Urinary Surgery. By Hurry Fenwick, F.R.C.S. London: Hirschfeld Bros. Bristol: John Wright & Co. 1894.

This is a well-illustrated volume of 207 pages, the object of which, as stated in the preface, being to give a *résumé* of the recent literature of the subject. This the author presents in the form of brief summaries under the following seven principal headings: (1) Surgery of the Kidney, (2) Surgery of the Ureters, (3) Surgery of the Bladder, (4) Electric Cystoscopy, (5) Diseases of the Prostate, (6) Diseases of the Seminal Vesicles, (7) Diseases of the Urethra.

The more important points of a great variety of topics are set forth in a clear and condensed form, and in a way that is often novel and calculated to tempt the student to more extended study of the subjects which are here intentionally only outlined, or their essentials briefly stated. As an example of this may be mentioned the last paragraph on page 5, in which reference is made to the interesting experiments of Lewin and Goldschmidt[1] "upon the behaviour of the ureters under intravesical pressure which was tested by observations through an abdominal wound while injecting the bladder with air and various fluids."

The technique of kidney operations is well described in the first division of the book, and some of the matters usually omitted from the text-books are to be found here, such, for instance, as the resection of the ribs in certain cases of nephrectomy, as recommended by Lange, of New York. Statistics of the results of the various operations are also given. Another example of the more rarely considered subjects is that of the differential diagnostic symptoms between renal calculus moveable in the pelvis and fixed in the substance of the kidney.

In some parts of the book the author is open to the criticism of not keeping to the professed character of the work as a compilation. This is especially true of the chapter on Bladder Tumors, which consists almost entirely of a reprint of an editorial by Mr. Hurry Fenwick, of which the writer's personal experience and views form the chief part. We are not prepared to say, however, that it is less valuable on this account.

The chapter on the Surgery of the Ureters is one of the least satisfactory in the book. It contains no reference to Fengers's work, or to the anatomical researches of Cabot to determine the accessibility of the ureters to operative approach through the sacrum. Stricture of the ureter is not mentioned, and the removal of ureteral stone is barely touched upon. The writer is similarly capricious as to his choice of the works of the various authors which he has omitted or included elsewhere in the book. There is nothing said, for example, of Kelly's method of examining the female bladder, and of his treatment, or of Vignard's excellent treatise on Prostatotomy and Prostatectomy.

As would be expected from such a past master in the art of electric illumination of the urinary organs, all that concerns this part of the subject is presented in the most satisfactory manner.

As is suggested in the preface, the advance of modern surgery is so rapid that the text-books cannot keep pace with it, and consequently there are many vacancies in them which such contemporary compilations as this one are well suited to fill. Whatever its defects may be, and they are not serious, they are well compensated for by the large amount of valuable information which the author has compressed into it; and the student may gather rapidly from it much useful and practical knowledge of the recent steps of progress in this branch of surgery.

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[1] Virchow's Arch., Band 134, Heft 1, p. 33.

Principles of Surgery and Surgical Pathology. General Rules governing Operations and the Application of Dressings. By HERMANN TILLMANNS, M.D., Professor in the University of Leipzig. Translated from the Third German Edition by JOHN ROGERS, M.D., New York, and BENJAMIN TILTON, M.D., New York. Edited by LEWIS A. STIMSON, M.D., Professor of Surgery in the University of the City of New York, Medical Department. With 441 Illustrations. New York: D. Appleton & Co. 1894.

This work is a translation from the German, edited by Dr. Stimson, and is a result of the special needs of the students of some of the professors of surgery in New York, who desired a work on surgery which would include not alone "the general affections and pathology, but also the pathology and principles of treatment of the injuries and diseases of the various tissues."

It is an attractive book from the clearness of its division. It takes up the operations of surgery and the dressings of wounds and all that concerns them. The illustrations do not compare with many of our American books, either in clearness of detail or as works of art. The chapters upon micro-organisms and inflammation are especially worthy of commendation. The chapter upon fractures is, from a pathological point of view, good, but from the standpoint of treatment is hardly to be commended.

Perhaps as a text-book of surgery the book would be satisfactory to the beginner, and it presents surgery from a pathological standpoint which is very desirable. A great many of the methods are German, and there are a few American.

Chemistry: General, Medical and Pharmaceutical, including the Chemistry of the U. S. Pharmacopœia. By JOHN ATTFIELD, F.R.S. Fourteenth edition. Philadelphia: Lea Brothers & Co. 1894.

The present edition, which corresponds to the fifteenth British edition, contains such additions as seemed to the author necessary for the demonstration of the latest developments in chemical principles and the latest applications of chemistry to pharmacy. On the other hand, some of the matter of the earlier editions has been omitted, in order to keep the book within the limits of a student's manual.

We regret that the author still retains the chapters on Toxicology and Urinary Chemistry, which we have so many times criticized as inadequate and in many respects inaccurate. Excepting these chapters, however, this work of Professor Attfield is, on the whole, an excellent one. It is specially adapted to the requirements of students of pharmacy, and contains much more valuable information than can be found in any other book on general chemistry of the same size.

FATAL QUARREL BETWEEN SURGEONS.— Two surgeons of Portland, Or., who had formerly been partners, quarrelled over an operation performed by one of them at the city hospital, and shot each other fatally.— *Medical Record.*

THE BOSTON

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FLOATING BODIES IN JOINTS.

HALSTEAD in the September number of the *Annals of Surgery*, reports three cases of operation for this interesting and comparatively frequent lesion. Floating bodies, or joint mice, are bodies composed of bone, cartilage, masses of fat, fibrous tissue or fibrin loose in a joint or attached to some portion of its surface by pedicles. They are most frequently found in the knee-joint, as would naturally be expected from the extent of the joint surface, and its exposure to traumatism. They are next in frequency in the elbow-joint, and rarely in the ankle and wrist.

Their cause has been a much-disputed question, and various theories have been advanced for its solution.

Of late, exact clinical histories and careful histological examinations of these bodies have done much to clear up their etiology, which has been found to be varied, so that they fall into several classes.

According to Volkmann's general classification, they may be divided into two groups: first, those which are found in otherwise healthy joints, the disease, if any be present, being merely that which is caused by the presence of the bodies; second, those which are found in diseased joints.

In the first group we have as a sub-class, first, those which are purely of traumatic origin. These consist either of cartilage or bone, or of cartilage and bone combined, and are comparatively rare, as Halstead has found only three such cases in the literature of the subject, and one of these is doubtful. Semilunar cartilages which are sometimes completely detached by traumatism so as to become loose bodies are not included by Halstead in this group, but only completely separated pieces of the articular ends of the bones. Halstead's reason for not including these detached semilunar cartilages, or their fragments in this class is not apparent. There is no obvious reason for their exclusion from this class, as they are certainly loose bodies of traumatic origin, and nothing else, and their inclusion would bring up the number of traumatic loose bodies to a much larger total. Of pieces of the articular ends of the bones directly and immediately detached by traumatism, of which alone Halstead constitutes this class, there is only one case reported, that of Volkmann, in which the patient survived the injury, as the trauma which breaks off directly and completely a piece of the articular end of the bone must necessarily be severe.

In the second sub-class are included pieces of bone or cartilage which were not completely detached at the time of the injury, but became separated later. The pathological condition in these cases was recognized by Paget, and called by him "quiet necrosis," and later studied by König, under the name of *osteo-chondritis dessicans.* Its cause is unknown. It may follow a traumatism, or originate spontaneously. It may develop at any period of life. Small pieces of the articular ends of the bone may become detached, becoming floating bodies, or, as sometimes occurs in the hip- and shoulder-joints, the whole articular end of the bone may separate.

The bodies included in this class consist of cartilage or of cartilage and bone, and show a surface corresponding to the articular surface of the joint, covered by hyaline cartilage. A defect is found in the articular surface of the bone at their point of detachment, corresponding in size to the bodies, and in a general way to their shape, though they are usually more smooth and facetted where they have come in contact with the surfaces of the joint. They may be multiple, but are rarely more than three or four in number, and are usually single. Cases have been reported in which they were symmetrical, affecting homologous joints.

No evidence of disease of the joint is found except a recurrent synovitis due to the presence of the bodies.

The third class in the first group consists of loose bodies originating from hemorrhage into a sound joint as the result of traumatism. These are rare, and are found some time after an injury to the joint, attended by evidence of hemorrhages into it. The symptoms are usually severe for a time, but subsequently disappear spontaneously and are followed by complete recovery. Shattock has reported a case in which a pedunculated body was removed from the knee-joint, which was found on microscopic examination to consist of finely intercommunicating trabeculæ, resembling fibrous tissue, containing in their interstices a fine, reddish-brown pigment, with some red and white blood corpuscles. This was regarded as partly-organized blood-clot.

In the fourth class of the first group are included cases in which foreign bodies, such as bullets or bits of steel, have remained in the joint and acted as nuclei for the formation of loose cartilages. These cases are extremely rare.

Of the second group, namely, loose bodies resulting from joint disease, the most frequent class is that of the corpora oryzoidea, or rice bodies, found in tubercular joint synovitis. They may originate as pure concretions, by desquamated epithelium forming nuclei upon which layers of fibrin are deposited, or by the detachment of villi upon which fibrin is deposited in layers.

These, as a rule, do not produce the common symptoms of loose bodies in the joint, partly because of their small size, and partly because the underlying pathological conditions produce symptoms which obscure those caused by the bodies.

The second class under this heading are bodies arising from cartilaginous metamorphosis of the synovial membrane or fibrous layer of the capsule and are subsequently drawn into the joint, and either become entirely free or remain attached by a pedicle. These, as a rule, remain attached to the capsule, but are sometimes found free. They are comparatively common. They consist of bone and cartilage in varying proportions, the smaller being chiefly cartilaginous, the larger chiefly bony. The larger they are the more likely they are to have become detached from their pedicles, which become more and more attenuated, and finally break off. The pedicles, as a rule, contain no blood-vessels.

The third class of the second group consists of normal joint villi which become detached as a result of pathological changes. They arise by proliferation of cartilage cells in the swollen ends of the villi, or sometimes by their calcification. These swollen and altered villi are consequently detached by being caught between the articular ends of the bones. Rokitansky thought that all cartilaginous joint bodies were formed in this way. Simon observed a sarcoma of a villus which had become detached and formed a loose body.

The fourth class of this group consists of the loose bodies found in arthritis deformans. These are rare, and consist usually of bone, of irregular shape and uneven surface, more or less covered with cartilage.

The growth of loose bodies, which has been actually observed in some cases, may take place in two ways: (1) by the deposition of successive layers of fibrin; (2) by the proliferation of cartilage or bone cells originally present in the body, the nourishment being supplied by the synovia.

The chief and characteristic symptoms of loose bodies in joints is the sudden locking of the joint, usually in the position of nearly complete extension, attended by sharp pain and usually by a peculiar sense of nausea. This may last for several days, any attempt to change the position of the joint causing severe pain and is immediately followed by an acute synovitis. These symptoms recur at longer or shorter intervals, and the diagnosis is completed by palpation of the body, which in the knee-joint is usually found just to the inner side of the patella.

Cases have been reported in the growing period of life in which a lengthening of the femur on the affected side was noted and ascribed to the constant irritation produced by the presence of the body.

The treatment of these cases under the aseptic *régime* has reduced itself to incision of the joint and removal of the body. Halstead justly prefers local anesthesia by weak solutions of cocaine for this operation, for the reason that the patient can assist in finding the body if it should slip away from under the surgeon's hand during the operation. That this advantage is of no mean value will be readily acknowledged by any one who has experienced the difficulty which is sometimes found in re-locating the body when the patient is under the influence of a general anesthetic.

It is interesting to note that during the pre-antiseptic period the mortality from opening the knee-joint was so high that Bell recommended amputation in those cases in which an operation was indicated, in preference to opening the knee-joint. The mortality of the operation was then thirty-three per cent., and a large number of those who escaped with their lives got off with a stiff knee-joint as the result of septic infection.

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THE USE AND ABUSE OF THE CURETTE.

OF late years the curette has assumed an important place in gynecological surgery. It has largely superseded older methods of treatment in the various forms of endometritis. Medicated applications to the cervical canal and corporeal mucosa are always difficult, and often impossible without dilatation, and when made, are not seldom unsatisfactory, frequent repetition being necessary. A more expeditious and thorough measure for removing disease tissue and septic *débris* seems needed, and doubtless in many cases the curette properly used meets the want. In fact, the curette has come into general favor; and recent writers have spoken of the prevalent fashion of curettement as a craze, and have pointed out numerous failures, disappointments, and even disastrous results from the injudicious use of the curette, or from its application to unsuitable cases. Several articles have appeared in the gynecological journals the past season calling attention to the right and the wrong use of this instrument — the danger of perforation seems not to be as slight as has been represented; and the discussions at the gynecological meetings have brought into prominence the comparative advantages of curettage and other methods of treatment, topical and constitutional. The subject is well presented by Professor Bouilly in the last number of the *Bulletin Général de Thérapeutique*, under the head of "Curettage of the Womb, its Abuses and Failures, its Indications." We shall give the leading points of this article.

In the first place the curette can only be used with benefit in morbid conditions of the uterine mucosa and its subjacent tissue. In those forms attended with more profound alterations of the parenchyma and glands, with sclerous or sclero-cystic degeneration (total parenchymatous metrites, cervical hyperplastic glandular metrites, etc.), there is hardly any good to be expected from curetting, which, however, is particularly indicated in endometritis of the body of the uterus when it is of the nature of a superficial infection, such infection often follows the puerperal state and abortions, and the curette is the best therapeutic agent at our command, rigid antiseptic precautions being of course taken. Curettage is equally applicable to infections by retained blood and secretions in uterine fibroma and polypus, and where there are multiple polypi of small size, the curette is indispensable.

Marvels are wrought by the use of the curette in caseous or caseiform metritis of aged women, where the secretions accumulate and putrefy, simulating cancer of the body of the uterus.

The hemorrhagic forms of metritis generally belong to the superficial mucous affections just mentioned, and are amenable to curettage. This is, according to Pozzi, the form particularly assumed by *post-abortum* metritis, when simple, almost invisible, particles of the decidua are grafted upon the uterine mucosa; thorough scraping and lavage of the uterine cavity will arrest as by magic the most alarming hemorrhages. In common catarrhal metritis, after the acute stage has passed if the curette be used before sclerotic changes and follicular degeneration have progressed far, before there has been propagation to the Fallopian tubes or perimetrium good results may be expected.[1] Curetting is almost certain to fail in membranous dysmenorrhea, in the parenchymatously thickened sub-involuted uterus, in hydrorrhea, symptomatic of a lesion of the annexes, and when employed for the metrorrhagic and leucorrheal discharges coming on at fixed date between the menstrual epochs.[2] The same general statement applies to metritis of the cervix, for "the depth of the lesions seated in the glandular culs-de-sac submucous and intermuscular — puts them beyond the reach of the instrument," in lacerations of the cervix, especially when complicated with cicatricial ectropion, curetting can be but an adjuvant to trachelorrhaphy. Finally, in the acute or subacute infections, blennorrhagic or otherwise, it is a dangerous operation.

As for the use of the curette in perimetric affections, it may be laid down as a rule that two conditions dominate the indications and may enable one to foresee the success of failure of curettage: on the one hand, the existence of a uterine infection which may be suppressed by the ablation of the mucosa; on the other, the nature and degree of the peri-uterine lesions. Curetting can only do good if performed very early, "before the production of lesions in the annexes well and duly constituted."[3]

To the same purport were the views expressed during the discussion of the endometrites at the German Congress of Gynecology held this summer. Professor Fehling thought, "there is no question that treatment by curetting is now greatly overdone." He regards curetting as indicated only for diagnostic purposes and as a means of treating fungous endometritis, decidual endometritis *post-partem* and *post-abortum* as well as exfoliative endometritis, that is to say, when it is imperative to remove the diseased mucous membrane. In cases of chronic catarrhal endometritis, it should only be employed "when all other means of treatment have proved unsuccessful." Professor Olshausen "would like to see curetting restricted to fungous and exfoliative endometrites." Professor Skutsch also "desired to protest against the abuse of curetting," and wished that this treatment might never be employed except by persons who are accustomed to gynecological operations.

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[1] Pozzi.
[2] Bouilly, Bulletin Général de Thérapeutique.
[3] Bouilly, loc. cit.

The results of curetting at the Basle Clinic and for cases there judged suitable according to Vogelbach, are as follows: Complete recovery, 69.2 per cent.; improvement and temporary recovery, 20.1 per cent.; no effect, 10.7 per cent. All these patients were kept under observation from one to six years after the operation.

MEDICAL NOTES.

Reported Danger of the Invasion of the Pacific Coast by Cholera.— It is reported in the New York daily papers that the steamer *Belgic* brought cases of cholera from Hong Kong to Honolulu, where she landed eight cases, and then proceeded to San Francisco, where she presented a clean bill of health, although two deaths had occurred from pneumonia and heart-disease on the way. Eighteen of the Chinese passengers are said to have started East by train.

The French Congress of Alienists and Neurologists.— The French Congress of Alienists and Neurologists will meet in 1896 at Nancy. Professor Pitres, Dean of the Faculty of Bordeaux, has been elected President of the coming session, and Dr. Lallemand, of Nancy, Secretary.

The Effect of Removal of the Ovaries upon the Sexual Appetite.— Dr. A. Lapthorn Smith, of Montreal, Can., has published in the *Medical Record* an account of a woman who acquired gonorrhea seven years after removal of her ovaries and tubes. According to her testimony her pleasure in sexual intercourse had increased rather than diminished since the operation of removing the ovaries and tubes, which is contrary to the general opinion on this subject.

False Reports of Contagious Disease.— It is provided by law in Florida, that "any person or persons who shall falsely or maliciously disseminate or spread rumors or reports concerning the existence of any infectious or contagious disease shall be guilty of a misdemeanor, and, upon conviction, shall be punished by a fine in a sum of not less than $100 nor more than $1,000, or be imprisoned in the county jail for not less than three nor more than six months."

The Prevention of Blindness.— The Senate and General Assembly of the State of Illinois at the last session passed a law providing that, should any midwife or nurse having charge of an infant in that State notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse having charge of such infant to report such fact in writing, within six hours, to the health officer, or some legally qualified practitioner of medicine in the city, town or district in which the parents of the infant reside. Any failure to comply with the provisions of this act shall be punishable by a fine not to exceed $100 or imprisonment not to exceed six months, or both.

Uterine Flatus. — According to the *Medical Press and Circular*, July 26th, an interesting instance of "phantom tumor" of the uterus due to tympanites of that organ, has been reported by Dr. Lichtenstein, of Liegnitz. On account of a chronic metritis, a patient was successfully treated by tamponment with iodoform gauze. A considerable time afterward she suffered from violent pains in the abdomen. On examination, the abdomen was found much distended, and the uterus three finger-breadths above the umbilicus. On examining with the sound it passed into a large empty cavity, and air escaped out of the uterus with a distinct pop. The patient was frequently troubled in this way, the uterine tympany always coming on when the stomach or bowels were disordered. A few days after the attack described there was still pain at the side of the uterus. Massage, rhubarb and charcoal still further improved the condition.

The Question of the Effects of the New Magazine Rifles.— The importance of a definite understanding of the effects of the new magazine rifles, discussed in our editorial of last week, and the fact that such an understanding has hardly been arrived at up to the present time, are obvious. We learn from the *British Medical Journal* that when the late war broke out in the East an experienced officer of the British Army Medical Staff, Surgeon-Colonel William Taylor, was deputed to accompany the Japanese army for the special purpose of studying the medical aspects of the campaign in general, and the effects of the new bullets in particular. As his report has probably already been sent in to the War Office, it is to be hoped that its publication will not be long deferred.

The Tongue-Traction Method as applied to Birds.— Dr. Souloumiac de St. Agnant publishes in *La Tribune Médicale* a rhyme in praise of Dr. Laborde's tongue-traction method as successfully applied in the case of a pet sparrow which had fallen into the water, and was revived by making rhythmic tractions in the tongue:

> "C'est moi qui suis content de notre ami Laborde,
> Grâce à lui, ce matin, j'ai sauvé mon moineau." . . .

La Médecine Moderne remarks that this is not the first time this method has been successfully applied to birds, as Dr. Raffegeau, of Vérinet, revived by this method a hen which was apparently dead from exposure to severe cold.

Tubercular Infection in Street Cars. — Dr. William G. Bissell calls attention to the danger of tubercular infection in street cars, in an article in the August number of the *Buffalo Medical Journal.* The great danger from the drying and dissemination as dust of the sputum so freely distributed over the floors of street-cars, especially those of the open cars in which smoking is allowed, is a matter well worth legislative attention. Dr. Bissell's article is illustrated by a micro-photograph showing hundreds of tubercle bacilli from a sample of dust taken from a street-car in Buffalo. When we consider the well-known fact that these bacilli in the dried state maintain their virulence for years, we can appreciate the danger from this source in large communities. The education of the public with regard to the danger of indiscriminate expectoration is not enough. Spitting in street-cars and public buildings should be prohibited by city ordinance.

INTELLECTUAL DETACHMENT. — In the *Nineteenth Century* for July, Sir Herbert Maxwell relates the following: "The outspoken ways and caustic sayings of Dr. Jephson, of Leamington, celebrated in the forties and fifties, have furnished the kernel of many anecdotes. One day he was called on by one whom Brantome would have called *une grande dame de par le monde*, the Marchioness of ——. Having listened to a description of her malady, the oracle pronounced judgment: 'An egg and a cup of tea for breakfast, then walk for two hours; a slice of cold beef and half a glass of Madeira for luncheon, then walk again for two hours; fish (except salmon) and a cutlet or wing of fowl for dinner, with a single glass of Madeira or claret; to bed at ten and rise at six, etc. No carriage exercise, please.' 'But, doctor,' she exclaimed at last, thinking he was mistaken in his visitor, 'pray do you know who I am? Do you know — ahem! — my position?' 'Perfectly, madame,' was the reply. 'I am prescribing for an old woman with a deranged stomach.' From this it is clear that it behooved this exalted lady to cultivate detachment as the preliminary to a return to health; to regulate her life without any reference to her rank in the peerage, her station in society, or the number of carriage horses in her stable."

NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, September 4, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 71, scarlet fever 23, measles 11, typhoid fever 51.

NEW YORK.

VISIT OF DR. FORBES WINSLOW.— Dr. Forbes Winslow, the eminent English authority on nervous and mental disorders and editor of the *Psychological Journal*, arrived in New York on August 31st. He will remain three or four months, and purposes revisiting this country for a like period each autumn in the future for consultations on his specialty. He presides over the Medico-Legal Congress, which meets on September 4th, 5th and 6th, and the subject of his address is "Suicide Considered as a Mental Epidemic."

FATAL EFFECTS OF HOT WEATHER.— Dr. Tracy, Registrar of Vital Statistics, reports that during the week ending August 31st there were 851 deaths in the city, the average for the corresponding weeks for the past five years being 775; 114 deaths were due to diarrheal diseases, and of these, 125 occurred in children under five years of age. This comparatively large mortality, while not at all excessive, was no doubt due to the very hot and humid weather which prevailed last week. The physicians of St. John's Guild report that in no week during the summer are so many very ill children under their care. The Sea Side Hospital at New Dorp, Staten Island, was filled to overflowing, so that it was impossible to accommodate many that should have been admitted there, and on the daily trip of the Floating Hospital on August 30th, two deaths occurred among the infants on board.

RECOVERY FROM A SEVERE ELECTRIC SHOCK.— A lineman of the Brush Electric Light Works at Rochester received a shock from a live wire carrying about 1,500 volts on August 28th. When picked up he was apparently dead, but was subsequently resuscitated by artificial respiration and other appropriate measures. In a few hours he appeared to have entirely recovered, except that he was suffering from a very severe burn on the arm.

ANTHRAX IN THE STATE OF NEW YORK.— In reply to a letter of inquiry from the British Vice-Consul-General at New York, Mr. George L. Flanders, Assistant Commissioner of the State Agricultural Department at Albany, has written, under date of August 31st, that anthrax has broken out in sporadic cases in the following counties: Sullivan, Delaware, Chenango, Chautauqua, Wyoming, Oswego and Lewis, and that the attention of the Department was first called to it about the first of August. He then goes on to state: "While it is more severe than it has been before in about seven years, we are not allowing it to spread, but are quarantining the cattle as fast as we find it. Nearly all the cattle that have died from it died before this department became aware of the disease among them. It is thought by our experts to be due to climatic influences, and especially, extremely dry weather." Anthrax has also appeared among the horses and cattle at Rahway, New Jersey, and its vicinity, and during the last few days of August a considerable number of animals died from it. The State Board of Health was promptly notified and inspectors have been sent to the locality for the purpose of stamping out the disease.

THE J. HOOD WRIGHT MEMORIAL HOSPITAL.— Justice O'Brien, of the Supreme Court, has granted permission to the trustees of the Manhattan Hospital and Dispensary to change the name of the institution to the J. Hood Wright Memorial Hospital. This is in acknowledgment of the very large endowment bequeathed to the hospital by the late Mr. Wright, and of the generosity of Mrs. Wright, who since his death has donated ground for the enlargement of the hospital.

◆

Miscellany.

RESULTS OF THE ANTITOXIN TREATMENT OF DIPHTHERIA IN GERMANY.

The results of the collective investigation relative to the antitoxin treatment of diphtheria in Germany conducted by the *Deutsche medicinische Wochenschrift*, have recently been published. The following is a summary of the facts set forth in the replies to the schedules issued to practitioners. The observations extended over the period from October 1, 1894, to April 1, 1895.

The total number of cases of diphtheria reported was 10,312. Of these, 5,833 were treated with serum and 4,479 without it; the proportion of deaths in the former group was 9.6 per cent., while in the latter it was 14.7 per cent. In 401 cases of children under the age of two years in which the serum treatment was used early — that is to say, on the first or second day of illness — 11.8 per cent. died, the mortality-rate under corresponding conditions when serum was not used being 39.7 per cent. Of 2,556 children between two and ten years of age 4.0 per cent. died after timely treatment with serum, the death-rate among those not so treated being 15.2 per cent. Of 696 patients over ten years of age only 1.0 per cent. died after early treatment with serum, the mortality among the others being 3.7 per cent. This gives a total death-rate of 4.2 per cent. when the serum was used on the first or second day of illness, against a percentage of 14.7 when no serum was used. When the use of the serum was begun late, that is, after the second day, the mortality at the three age periods already indicated was 34.4, 14.9, and 9.9 respectively, giving an average percentage for the three classes taken together of 16.9 per cent.

As regards dosage, the mortality in cases in which 600 units were given was, in children under two, 16.1; in those between two and ten, 5.3; and in those above ten, 1.8 per cent., an average percentage of 6 per cent. for the three groups; when 1,000 units were used, the deaths in the three classes were respectively 33.6, 13.8, and 7.5 per cent., an average percentage of 14.6.

Death from heart-failure occurred in 69 cases, or 1.2 per cent.; albuminuria was noted in 724 cases, paralysis in 343, but no death occurred from this cause.

◆

THE TREATMENT OF TETANUS WITH TETANO-ANTITOXIN.

Marson[1] gives an account of a case of tetanus in an adult unsuccessfully treated by the tetano-antitoxin at the Staffordshire general infirmary. The treatment was begun on the sixth day of the disease, and on the tenth day the spasms had ceased, but symptoms of septicemia appeared and increased until the man's death, which took place on the seventeenth day.

The writer thinks that the death, which in this case was apparently due to septicemia, should not be used as a basis for unfavorable deductions with respect to the antitoxin treatment of the disease. He has collected accounts of 38 cases of tetanus treated by antitoxin, from which it appears that there were 25 recoveries and 13 deaths. In 22 cases the particulars are given, and of these 17 recovered and five died. Nine cases of which particulars were given were regarded by their writers as severe; and of these five recovered and four died. Out of 13 cases reported as "not severe," 12 recovered.

The writer regards the average mortality of tetanus untreated by antitoxin in chronic cases as 50 per cent., and in acute cases as 90 per cent., and considers that the decrease in mortality, as deduced from the cases reported of the antitoxin treatment, justifies the statement that "the serum may be justly called a remedy for the disease of such importance that up to the present time no other method of treatment can bear comparison with it."

◆

A CENTENARIAN SURGEON.[1]

At Pesaro, on the Adriatic, Dr. Giacomo Asiari attained his hundredth year on the 29th ult., and a brief biography of him has just been issued by a local colleague, Dr. Carlo Rigoni, with the twofold object of putting on record the career of an interesting professional man, and of establishing, subject to every available check, yet another *bona fide* instance of a centenarian.

Dr. Asiari was born at Forli on July 29, 1795, at noon. He studied at Forli, Faenza, Ravenna and Florence; at which latter school, on June 17, 1821, he received his diploma in medicine and surgery. In 1823 he was called to Spoleto as *chirurgo primario* in the hospital there, and distinguished himself as an able and successful operator. His next appointment was in the University of Macerata, where he filled the post of *chirurgo primario* and reader in human anatomy. This readership he succeeded in getting transformed into a regular chair of anatomy, founding, indeed, a *scuola di anatomia*, which was previously non-existent in that seat of learning. In 1829 he was called to Pesaro, once more as *chirurgo primario*, and there his clinical duties and the calls of an ever-increasing *clientèle* kept him actively employed for the next thirty years, during which he took rank with the leading men of the city and province, like Count Cassi, Baldassini, Paoli, Petrucci and Perticari. He attended, among other distinguished patients, Prince Charles Bonaparte when, in company with his brother Louis (afterward Napoleon III), the Prince in alighting from his carriage had gravely injured his knee. In the cholera year of 1855 he rendered invaluable service to the poorer victims of the disease, for which the Pesarese town council awarded him the gold medal of merit. Finally, in June, 1861, he went on the retired list, and the town council, in recognition of his merits as a surgeon and as a citizen, gave him a life pension equal in amount to the salary he drew in office. Dr. Asiari thereupon made over his *armamentarium chirurgicum* to the San Salvatore Hospital, and his fine medical library to the Bibliotheca Oliveriana. Since then he has enjoyed a serene and honored old age, his one complaint being the intercurrent neuritis, to which he has been subject for seventy-eight years.

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[1] Lancet, August 10th.

[1] Lancet, No. 3755.

METEOROLOGICAL RECORD,

For the week ending August 24th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
M..19	29.78	70	79	62	64	55	60	N.W.	N.W.	9	12	O.	O.	
T..20	29.94	64	73	56	56	73	64	W.	S.W.	7	7	C.	C.	.02
W..21	29.91	65	73	57	56	50	53	W.	N.W.	12	13	C.	C.	
T..22	30.24	61	72	50	53	62	58	N.W.	S.W.	8	11	C.	C.	
F..23	30.06	70	81	58	71	78	74	S.W.	S.W.	17	13	F.	C.	
S...24	29.75	79	88	70	76	71	74	S.W.	S.W.	12	17	O.	O.	
S..25	29.92	74	83	66	62	48	55	N.W.	N.	15	8	C.	O.	.02
☞	29.94		78	60			64							.04

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 24, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,956,000	853	428	25.48	13.20	17.88	1.68	3.48
Chicago . . .	1,600,000	—	—	—	—	—	—	—
Philadelphia .	1,139,457	465	210	27.28	11.66	17.60	1.98	5.06
Brooklyn . .	1,043,000	438	220	26.68	8.97	19.32	.92	3.22
St. Louis . . .	540,800	—	—	—	—	—	—	—
Boston . . .	501,107	231	106	26.23	10.75	16.77	2.58	5.59
Baltimore . .	500,000	—	—	—	—	—	—	—
Cincinnati . .	325,000	—	—	—	—	—	—	—
Cleveland . .	325,000	95	—	42.00	5.25	26.25	2.10	3.15
Washington .	285,000	120	53	26.56	9.13	18.26	3.32	2.50
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	40	17	25.00	10.00	10.00	20.00	20.00
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	100,410	37	27	45.90	8.10	35.10	5.40	—
Fall River . .	92,233	47	24	36.21	6.39	31.95	2.13	2.13
Lowell . . .	90,613	—	—	—	—	—	—	—
Cambridge . .	79,607	32	16	31.25	12.52	25.00	3.13	—
Lynn	65,123	16	7	25.00	12.50	12.50	—	—
Springfield . .	50,284	15	8	46.66	6.66	46.66	—	—
Lawrence . .	49,900	—	—	—	—	—	—	—
New Bedford .	47,741	33	20	33.33	—	30.30	3.03	—
Holyoke . . .	43,348	—	—	—	—	—	—	—
Brockton . .	33,939	9	5	44.44	11.11	44.44	—	—
Salem	33,155	16	7	18.75	6.25	18.75	—	—
Haverhill . .	32,925	7	4	14.28	—	14.28	—	—
Malden . . .	30,209	9	3	33.33	—	33.33	—	—
Chelsea . . .	29,806	10	5	20.00	10.00	—	—	10.00
Fitchburg . .	29,388	12	11	74.97	—	74.97	—	—
Newton . . .	28,837	8	5	37.00	12.50	37.00	—	—
Gloucester . .	27,293	—	—	—	—	—	—	—
Taunton . . .	26,954	5	3	—	—	—	—	—
Waltham . .	22,058	12	4	—	8.33	—	—	—
Quincy . . .	19,642	9	5	22.22	11.11	22.22	—	—
Pittsfield . .	18,802	4	3	50.00	25.00	50.00	—	—
Everett . . .	16,585	—	—	—	—	—	—	—
Northampton .	16,331	3	1	33.33	66.66	33.33	—	—
Newburyport .	14,073	—	—	—	—	—	—	—
Amesbury . .	10,920	2	2	50.00	—	50.00	—	—

Deaths reported 2,647; under five years of age 1,229; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 730, consumption 280, acute lung diseases 156, diarrheal diseases 509, diphtheria and croup 91, typhoid fever 48, whooping-cough 26, measles 22, scarlet fever 11, malarial fever 9, cerebro-spinal meningitis 8, erysipelas 4, small-pox 3.

From whooping-cough New York 9, Philadelphia and Brooklyn 7 each, Washington, Nashville and Cambridge 1 each. From measles New York 16, Brooklyn 4, Philadelphia 2. From scarlet fever Woburn 5, New York 4, Brooklyn and Boston 1 each. From malarial fever New York 3, Brooklyn and Washington 2 each, Boston and Nashville 1 each. From cerebro-spinal meningitis New York, Worcester and Lynn 2 each, Philadelphia and Chelsea 1 each. From erysipelas New York 3, Brooklyn 1. From small-pox Philadelphia 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending August 10th, the death-rate was 20.8. Deaths reported 4,225; acute diseases of the respiratory organs (London) 159, diarrhea 736, measles 109, diphtheria 76, whooping-cough 65, fever 46, scarlet fever 39, small-pox (London 3, Oldham 2, Liverpool 1) 6.

The death-rates ranged from 13.6 in Croydon to 33.8 in Preston; Birmingham 20.3, Bradford 18.2, Cardiff 21.1, Leeds 20.4, Leicester 24.2, Liverpool 30.5, London 19.0, Manchester 27.1, Nottingham 21.9, Portsmouth 15.5, Sunderland 23.9.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending August 17th, the death-rate was 19.1. Deaths reported 3,884; diarrhea 610, measles 115, diphtheria 82, whooping-cough 48, scarlet fever 38, small-pox (Oldham 2, London 1) 3.

The death-rates ranged from 9.1 in Croydon to 31.0 in Preston: Birmingham 19.7, Bradford 19.6, Cardiff 15.4, Gateshead 19.0, Leeds 18.5, Leicester 18.8, Liverpool 27.7, London 17.3, Manchester 25.5, Newcastle-on-Tyne 16.9, Nottingham 22.8, Sunderland 22.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 24, 1895, TO AUGUST 30, 1895.

FIRST-LIEUT. WILLIAM W. QUINTON, assistant surgeon, is relieved from duty at Fort Riley, Kansas, and ordered to Fort Logan, Colorado, for temporary duty, relieving **CAPTAIN LOUIS A. LAGARDE**, assistant surgeon.

CAPTAIN LAGARDE, on being thus relieved, will proceed to Boston, Mass., and report for duty as attending surgeon and examiner of recruits.

Leave of absence to date from August 21st and to include September 30, 1895, is granted **LIEUT.-COL. JOHN S. BILLINGS**, deputy surgeon-general, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 31, 1895.

J. E. GARDNER, surgeon, and **F. J. B. CORDEIRO**, passed assistant surgeon, to temporary duty as members of the medical board at the Naval Academy, September 5th.

SOCIETY NOTICE.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.—The fifth annual meeting of the Association will be held in the Council Room of the College of Physicians and Surgeons of Ontario, corner Bay and Richmond Streets, Toronto, Can., Tuesday, Wednesday and Thursday, September 3, 4 and 5, 1895. Members of the profession are cordially invited to attend.

RECENT DEATH.

JOHN SYLER BRISTOWE, M.D., Senior Consulting Physician to St. Thomas's Hospital and formerly president of many medical societies, died August 20th. He was the author of a very well-known work, "The Theory and Practice of Medicine," and was distinguished as a clinical teacher.

BOOKS AND PAMPHLETS RECEIVED.

Charter and By-Laws of the Medical Society of the State of Pennsylvania. Reprint. 1895.

Pulmonary Hypertrophic Osteo-Arthropathy. By N. S. Davis, Jr., A.M., M.D., Chicago. Reprint. 1895.

The Liver as an Organ of Elimination of Corpuscular Elements. By Gustav Fütterer, M.D. Reprint. 1895.

The Treatment of Laryngeal Tuberculosis, with a Report of Cases. By Robert Levy, M.D., Denver, Col. Reprint. 1895.

Transactions of the Medical Society of Pennsylvania at its Forty-fifth Annual Session held at Chambersburg, 1895. Vol. XXVI. Philadelphia: Published by the Society. 1895.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army, Authors and Subjects. Vol. XVI. W - Zythus. Washington: Government Printing Office. 1895.

Seventeenth Annual Report of the State Board of Health of Illinois (being for the year ended December 31, 1894). With an Appendix containing the Official Register of Physicians and Midwives, 1895. Springfield, Ill.: Printed by the State. 1895.

Alphabetical List of the Abbreviations of Titles of Medical Periodicals employed in the Index-Catalogue of the Library of the Surgeon-General's Office, United States Army, from Vol. I to Vol. XVI inclusive. Washington: Government Printing Office. 1895.

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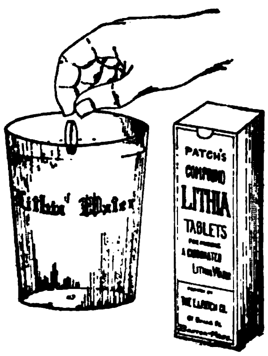

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PAGE

LECTURE.

METRITIS AS A CAUSE OF MISCARRIAGE. *By Charles Greene Cumston, B.M.S., M.D.*, Instructor in Clinical Gynecology, Faculty of Medicine, Tufts College; Member of the Société Française d'Electrothérapie; etc. Lecture III 253

ORIGINAL ARTICLES.

THE CLINICAL USE OF DIPHTHERIA ANTITOXIN. *By William Hallock Park, M.D.*, New York 255

ANTITOXIN IN DIPHTHERIA. *By Charles F. Withington, M.D.*, Roxbury, Mass., Assistant Visiting Physician, Boston City Hospital 260

ANTITOXIN IN DIPHTHERIA. *By George G. Sears, M.D.*, Boston, Physician to Out-Patients, Boston City Hospital 261

CLINICAL DEPARTMENT.

A CASE OF ANEURISM OF THE THORACIC AORTA. *By Sarah M. Crawford, M.D* 263

MEDICAL PROGRESS.

REPORT UPON FOODS, DRUGS AND ARTICLES OF DOMESTIC USE. *By Bennett F. Davenport, M.D* 264

Relative Digestibility and Nutritive Value of Oleomargarine and Natural Butter.— Wines Produced in California. — Liquors of Good Standard Quality Defined. — Boric Acid in Fruits.—Copper in Preserved Fruits and Vegetables.— Antimony in Enamel-Ware Cooking Utensils.—The Breton Vegetable Food Colors. — Milk for Children's Use. — Formaldehyde as an Antiseptic.

REPORTS OF SOCIETIES.

FIFTH ANNUAL MEETING OF THE HARVARD MEDICAL ALUMNI ASSOCIATION. (Continued) .. 266

Report of the Committee on the Harvard Medical School.— Speech of Dr. Roswell Park.— Speech of Dr. George Dock.

RECENT LITERATURE.

A Manual of Modern Surgery, General and Operative. By John C. DaCosta, M.D. Philadelphia: W. B. Saunders. 1894 273

Manual of Chemistry. By W. Simon, Ph.D., M.D. Philadelphia: Lea Brothers & Co. 1895 .. 274

Practical Uranalysis and Urinary Diagnoses. By Charles W. Purdy, M.D. Philadelphia: The F. A. Davis Co. 1894 274

EDITORIALS.

THE INFECTIOUS MYELITES 274

PAGE

THE CEREBRAL PATHOLOGY OF ASIATIC CHOLERA 276

MEDICAL NOTES 277

Subscriptions to the "Index Medicus."— The Milner-Fothergill Gold Medal.—The Sanitary Condition of the French Troops in Madagascar. — No Marriage without Vaccination. — Gonorrheal Rheumatism in the New-Born.— An Epidemic of the Dancing Sickness.

New England.

Acute Infectious Diseases in Boston. — Bequest to the Massachusetts General Hospital. — Bequests to Public Institutions.

New York.

The Medico-Legal Congress. — A Dearth of Vaccine Virus.— A Lower Mortality.

MISCELLANY.

BELLEVUE HOSPITAL 278

A HOSPITAL BROKEN UP BY A CHINESE MOB .. 278

INTRAVENOUS INJECTIONS OF MERCURIC CHLORIDE 278

METEOROLOGICAL RECORD, AUGUST 31, 1895 279

RECORD OF MORTALITY, AUGUST 31, 1895 279

ARMY AND MARINE-HOSPITAL SERVICES 280

SOCIETY NOTICE 280

CORRECTION 280

RECENT DEATHS 280

BOOKS AND PAMPHLETS RECEIVED 280

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

FOR PROFESSIONAL CARDS, MEDICAL SCHOOLS, ETC.,

See pages 16, 17, 18 and 19.

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PAGE 25.

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Lecture.

METRITIS AS A CAUSE OF MISCARRIAGE.[1]

BY CHARLES GREENE CUMSTON, B.M.S., M.D.,
Instructor in Clinical Gynecology, Faculty of Medicine, Tufts College; Member of the Société Française d'Electrothérapie, etc.

Lecture III.

Gentlemen: In this lecture I shall study the metritis of infectious diseases as well as that produced by intoxications of the economy by lead, mercury, etc.

The question of infectious metritis is far from being settled, as many deny its existence, while others describe it as a special and undoubted form.

Massin used eighteen cases who died from general acute infectious processes, such as typhoid fever, relapsing fever, croupous pneumonia, etc., for the study of the pathological changes produced in the uterus by these infections. These consisted in a parenchymatous or interstitial inflammation of the mucosa and an interstitial inflammation of the muscular tissue. In all there was found an endometritis with hemorrhagic foci in the substance and on the surface of the mucosa, and, according to the writer, the characteristic pathological change was a considerable afflux of blood to the uterus and venous stasis, in other words, the same changes as those found in other viscera in general acute infectious diseases. In some cases the venous stasis was the only thing abnormal, but in others there was extreme distention of the vessels with rupture of their walls, with resulting severe and numerous hemorrhages into the substance of the mucosa and muscular tissue of the uterus. The glands were also in a state of parenchymatous inflammation. The inflammation is sometimes diffuse, at others circumscribed, and appears to pass through three stages, namely: (*a*) Exaggerated afflux of blood to the uterus with venous stasis and vascular inflammation; (*b*) localized granular inflammation, consisting of a proliferation of round cells around vessels and glands; (*c*) diffusion of the inflammatory state.

Massin's studies corroborate the writings of Slavjanski on the hemorrhagic metritis of cholera; and they are so complete that after reading them, I am about convinced as to the possible existence of endometritis in acute infectious diseases.

I shall now proceed to discuss the question of metritis in acute infectious diseases occurring during pregnancy, and will begin with measles. When this disease appears in a pregnant woman, it will almost always bring about a miscarriage or premature labor. Underhill puts it at five times out of seven, while Klotz puts it at 75 per cent. The accident occurs at the time of the invasion of the disease or during the stage of eruption.

The cause of the interruption of gestation is difficult to explain, as the cough and dyspnea accompanying this pyrexia cannot be the factor, for the reason that there are other diseases, as pertussis, which have similar symptoms and in which pregnancy continues normally. The fever cannot be considered as the cause; the experiments of Doléris and Doré show the error of the results given by Kaminsky and Runge, so that its action is only accessory, excepting cases in which the rise of temperature is sudden and high. Likewise it is impossible to admit that the same disease in the fetus as in the mother is always the cause of miscarriage, for the former is often born without showing any signs of the disease.

For Charpentier, maternal toxemia is the cause; while for Vinay and others it is due to the action of the toxines elaborated by the agents of the infection. These toxines act either on the uterine muscle or on the nervous system, in the latter case producing contractions of the uterus.

Klotz admits that in measles, as in all other eruptive fevers, the miscarriage is the result of a simple exanthemic endometritis, which produces uterine contraction by a reflex action; a chronic metritis may also result.

Scarlet fever is very infrequent during gestation; but when it does occur, miscarriage is the rule. A case is reported by Hervieux, in which the affection appeared at the sixth month of pregnancy, and miscarriage took place on the second day of the eruption. The same factors have been put forward in scarlet fever as in measles; but in the former, death of the fetus is far more common.

Small-pox is one of the most serious complications of pregnancy for both mother and child, while varioloid is usually benign, but may give rise to miscarriage. Discrete small-pox produces miscarriage in about 50 per cent. of the cases, while in the confluent form this accident occurs in about 80 per cent. It is needless for me to say that the hemorrhagic form of this disease is usually fatal for both mother and child. Miscarriage occurs at different stages of small-pox, most often at the end of the eruptive stage when the secondary fever of suppuration takes place. Richardière, who has observed three cases of miscarriage in small-pox patients, remarked that this took place during the stage of suppuration. Interruption of pregnancy depends on the severity of the disease and also on the time of gestation when it appears, the chances of its occurrence being far less when pregnancy is not far advanced. Death of the fetus is frequent; about 70 per cent. die. Among the many factors in the production of miscarriage during small-pox I may mention fever, medullary lesions, rachialgia, accumulation of carbonic acid or oxide of carbon in the blood, etc.; but these conditions usually only play a secondary part. The generally accepted cause is the infection of the maternal and fetal organisms; on the one hand, it is the disease and death of the fetus, while on the other, it is the action of the toxines on the uterine muscles or on the nervous centre controlling the contractions.

Other observers believe that miscarriage is due to intra-uterine hemorrhages, first described by Péchloir and afterwards by Serres, Spiegelberg and others. They occur in the decidua, and detach the membranes, resulting in the expulsion of the product of conception which, according to the given case, will be alive or dead. The greater part of modern pathologists deny the existence of hemorrhagic metritis in small-pox which has been searched for in vain at the autopsy, and it is generally believed that the hemorrhage is the result of the miscarriage. On this point I have little to say, but I do not see why hemorrhagic metritis is not possible in the disease under consideration, for in one epidemic the disease may not attack the genital organs while in another it may. Now, if endometritis be admitted as occurring in some cases of small-pox, it will be easy to understand the occurrence of metrorrhagia in the pregnant and non-pregnant woman, as well as miscarriages taking place during the stage of intoxication and its disappearance. A table of 84 cases of small-pox during pregnancy is given by Costet, which shows that in a large number of cases miscarriage took place during the period of incubation or two months after recovery.

---

[1] Being four Clinical Lectures delivered at the Suffolk Dispensary, Boston.

The pregnant female is not immune to typhoid fever, which may occur at any time during gestation. This disease produces miscarriage in about 66 per cent. of the cases. Sacquin found 199 miscarriages out of 310 cases, in other words, 64 per cent. The interruption of pregnancy can occur at all periods of the disease, but particularly during the second week.

The products of conception born before the seventh month of gestation are generally dead, poisoned by the Eberth bacillus, which is transmitted directly from the mother, as the experiments of Chantmess and Widal have demonstrated. Consequently the most frequent cause of miscarriage in this disease is the products of secretion and the pathogenic agent itself, which act at the same time on the fetus by killing it, and on the uterus by producing contractions. But for a long time it has been known that typhoid fever can produce congestion of the uterus, especially in the pregnant state. In the beginning a flooding may appear which is quite similar to the frequent symptom epistaxis, but later on the hemorrhage is *passive* in character and is made easy on account of the friability of the vessels. Duhaut believes that there is a plethora of the uterus under these conditions, which may be active or passive, and easily producing a detachment of the placenta with resulting miscarriage.

But beside these hemorrhages due to a simple afflux of blood, others are met with which are due to a primary inflammation of the endometrium; in other words, a typical hemorrhagic endometritis. Although Gusserow has never met this lesion in typhoid occurring in the pregnant, he nevertheless admits its possibility, and states that the cause of hemorrhages is to be found in diseases of the endometrium; the pseudo-menstruation occurring in typhoid infection is to be explained in the same manner. Consequently hemorrhagic endometritis in typhoid fever during gestation or in the non-pregnant is still an hypothesis but has a considerable probability in its favor.

Cholera has a particularly bad influence on gestation, which is interrupted in more than 50 per cent. of cases, while women who do not abort during the course of this disease, usually die before the uterus has had time to empty itself. Death of the fetus takes place during the algid state or during the period of reaction. The cause of miscarriage in this disease, as in all others, has been interpreted in various ways. For some, death of the fetus is due to the loss of water which produces a decrease in the blood-pressure, having for result a diminution in the quantity of oxygen in the placental vessels, thus asphyxiating the product of conception. Others think that carbonic acid is in excess in the blood, which determines premature contractions of the uterus, while Queirel believes that it is the heavy black blood of the cyanic state that deprives the fetus of its normal hematosis.

According to the modern bacteriological researches, miscarriage in cholera, as in all other infectious diseases, is the result of intoxication of the maternal and fetal circulation by the bacillus of the disease, as well as its toxine. The well-known theory of Slavjanski should also be borne in mind. This observer, struck with the frequency of uterine hemorrhages during cholera, examined the cases in order to ascertain if these floodings were not a symptom of a pathological change, and the result was that he nearly always found lesions of the uterus. The decidua vera was very thick, soft and of a dark-violet color, and hemorrhagic foci, measuring as much as a centimetre and a half in diameter, were found in its substance. The decidua reflexa was also thick, but less so than the vera, and offered a few hemorrhagic foci not larger than millet seeds.

In pregnant women with cholera these changes are the cause of miscarriage, while in the non-pregnant, they cause hemorrhages. Let me add that this opinion has been attacked by many observers, particularly by Queirel, who never found a hemorrhagic endometritis in all his necropsies. However, these conscientious researches of Slavjanski remain as most instructive, and allow us, I think, to often attribute an abortion in cholera to hemorrhagic endometritis.

The action of influenza on the female genital organs is undoubted. In 1890, Müller gave statistics of 51 cases from which he concluded that this disease may produce metrorrhagia in the non-pregnant, characterized by its long duration and obstinacy to the usual therapeutic measures, while in the pregnant, miscarriage results. The experience of many others corroborates this view, and it is certain that the frequency of miscarriage and premature labor varies according to the severity of the epidemic. A third of Vinay's cases had a premature labor, and this is the result of the observations of others.

If, in other acute infectious diseases, the hypothesis of endometritis as a cause of miscarriage is attacked, there is certainly much reserve to be made in the case of influenza. According to Labadie-Lagrave, the hemorrhages in influenza are well explained by an acute inflammation of the mucosa; and what is more, taking into consideration the well-known influence of endometritis on miscarriage, the idea of an infection of the mucosa explains the occurrence of abortion and premature labor during *la grippe*. He thinks that it is difficult to admit a secondary infection, and believes that it is more in keeping to attribute the cause to the pathogenic agent of *la grippe* itself. Vinay also believes in an inflammation of the decidua, but this lesion is far from being constant.

It is also quite possible that the specific bacteria produces a toxine which acts on the nervous centres or on the muscular fibres of the uterus; but if we find ourselves in presence of characteristic uterine symptoms, I believe we should attribute the miscarriage or premature labor, as the case may be, to an infectious endometritis, and if there are hemorrhages before the beginning of any symptom of labor, it is most probable, as is argued by Vinay, that there is an endometritis of the decidua.

Gottschalk examined the endometrium of a number of patients having metrorrhagia, and always found it inflamed and in a state of desquamation; and, according to this observer, the specific organism of influenza acts in the genital tract in the same manner as the gonococcus.

I have, gentlemen, studied with you the infectious diseases in which endometritis has been considered by many as the factor in the production of miscarriage, and perhaps it also plays a kind of part in other infectious maladies. It is very probable that sudamina (?)

may produce metrorrhagia and deviation in the menses and miscarriage. As to lobar pneumonia, which is certainly a typical infectious disease, and which is sometimes accompanied by metrorrhagia according to Flatte, I have little to say. I have personally attended two pregnant women in this disease, and in neither was there any flooding during their illness; but in both, strange to relate, miscarriage occurred. In one it was six weeks after recovery; in the second, nearly two months after. Whether the interruption of gestation was due to the infectious process or not, I am not prepared to say.

You see, gentlemen, that acute infectious processes, especially certain ones, act directly on the uterine mucosa of pregnant women, and that this endometritis may cause miscarriage, the most frequently by hemorrhage, with resulting detachment of the ovum; but, as I have already remarked, I do not believe that an inflammation of the mucosa necessarily is present in every case of infectious disease and produces miscarriage.

The pathology of the latter depends on different conditions, such as the particular form taken by the given epidemic, the severity of the disease, the general conditions of the woman, and perhaps the manner of infection. It is impossible to attribute each and every miscarriage occurring during an infectious disease to the same mechanism or to the same agent producing the given infection.

In taking into consideration the modern theories of infection, we must remember a point often forgotten, namely, that infection of the organism may produce miscarriage, not only by the action of the bacteria and their toxines on the nervous centres or the muscular tissue of the uterus or the fetus itself, but also by their action on the cells of the uterine mucosa, producing the phenomena of inflammation.

As to intoxications by lead, mercury, sulphide of carbon, etc., their effects have long been known, but their manner of action is far from being understood, Of the intoxication by lead, or *saturnism*, I will say a few words. In 1860 Constantin Paul called attention to the influence of lead-intoxication of the parents on the product of conception, showing that it demonstrated its effects in many cases by death of the fetus and miscarriage; and out of 123 pregnancies he found 64 miscarriages. This fact is explained by the intoxication and death of the fetus on the one hand, while on the other, we have the action of the metal on the uterus. But beside these causes, which are the most frequent, it is also a fact that an endometritis may develop under the influence of saturnism. Cases have been reported of women suffering from lead-intoxication who presented typical symptoms of an endometritis during pregnancy, the child being born alive; the membranes were thickened, the placenta hypertrophied, etc.

A case occurred in the service of Professor Tarnier, of a woman suffering from saturnism, who had in all probability an endometritis of pregnancy. She was delivered at the seventh month of a living child weighing 1,340 grammes, while the placenta weighed 480 grammes.

If the hypothesis of endometritis produced by saturnism be admitted, it would be easy to explain the metrorrhagia and sterility which result. However, I will not take your time in further argument of this question; but let me, in terminating this lecture, say that women who are employed in rubber manufactories, where sulphide of carbon is employed in the preparation of the goods, miscarry often, and sterility is frequent.

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Original Articles.

THE CLINICAL USE OF DIPHTHERIA ANTITOXIN.[1]

BY WILLIAM HALLOCK PARK, M.D., NEW YORK.

Diphtheria is one of the most difficult of diseases in which to judge the effect of treatment, for the different cases vary so enormously in the amount and in the location of their lesions. Most important factors, such as the virulence of the diphtheria bacilli, the extent to which other bacteria are associated with them, and the local and general susceptibility of the patient, are, as a rule, largely unknown to us.

Before considering the results of the use of antitoxin, it will be well to touch briefly upon certain points in the course of diphtheria without antitoxin. Cases of diphtheria in which the pseudo-membrane is moderate in amount, and remains confined to the tonsils or adjacent parts after twenty-four to forty-eight hours, usually do well under any form of treatment, and are very rarely fatal if no complicating diseases exist. Cases, however, in which the pharynx and nose are also implicated, or in which pseudo-membrane is present in or below the larynx, are very dangerous. If the latter do not die from the immediate toxic poisoning, they are apt to develop later a broncho-pneumonia or a septic bronchitis. These are the cases which furnish more than half the deaths at the present time. There is also a variety of diphtheria which we recognize as septic. The diagnosis here must often be made more from the general condition of the patient than from any local signs. An important fact to bear in mind is that before the use of antitoxin, in a certain number of the cases, the exudate or pseudo-membrane would continue to increase in spite of any treatment. This experience was chiefly met with in the cases seen very early in the disease. For instance, in November, at the hospital three such cases occurred. M. R., three and a half years, was admitted, when but one day sick, with a slight patch on the left tonsil. Temperature was 100°; pulse 100. The membrane steadily increased until the child's death. K. M., two and one-half years, sick forty-eight hours, admitted with almost no symptoms. On the fourth day she developed laryngeal symptoms with high temperature, and died in three days. J. E., two and a half years, five days sick, tiny patches on tonsils and croupy cough. On the thirteenth day he developed laryngeal stenosis, was intubated, and died in forty-eight hours.

COMPLICATIONS MET WITH IN DIPHTHERIA BEFORE THE SERUM TREATMENT WAS USED.

A few illustrations selected from cases admitted to the hospital in the months just before the antitoxin period.

Child three years old, sick six days; membrane on tonsils, pharynx and in nostrils. On the third day of treatment complete suppression of urine; pulse dropped to 60. Death twenty-four hours later.

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[1] Read before the Annual Meeting of the Massachusetts Medical Society, June 12, 1895, and recommended for publication by the Society.

Child, age two years, four days sick; tiny patch on tonsils; pulse and temperature nearly normal. Developed pneumonia and suppurative otitis media on seventeenth day of disease; death twenty-first day.

Child, age eleven months; a little membrane on tonsils; temperature 100°; pulse 120. Within twenty-four hours temperature rose to 105°. Child seized with convulsions and died within twelve hours.

Child, six years old, but moderately sick. On fifteenth day tenderness of all joints. From time to time had general convulsions. These conditions continued until death took place on the twenty-eighth day.

A remembrance of these histories will aid us in estimating properly certain symptoms met with in cases under the antitoxin treatment.

THE ANTITOXIN SERUM.

The serum should have been kept in a moderately cool place; should be clear, and free from any bacterial growth. Now that the supply is abundant, only serum strong in antitoxin should be used. The serum used in these cases was prepared in the laboratories of the New York City Health Department.

Methods of injecting the serum.— A large hyperdermic injection syringe is selected, holding 10 c.c. It should have a strong, rather long, but not too thick needle. The usual methods of keeping a hyperdermic needle aseptic, and cleansing the skin, suffice. The injection should be made in subcutaneous cellular tissue, not in the muscles, and may be made on the side of the chest, over the pectorals, or in the buttocks, as desired. As a rule no after-pain is felt, but at times the spot is very tender for some days.

In a very few cases abscesses may develop. Proper serum and care in injecting should eliminate this danger.

Dose.— The size of the dose, I believe, should be measured chiefly by the extent and intensity of the disease; also, but to a less degree, by the size of the patient and the duration of the illness. For young children with but moderate lesions of tonsils or palate a single dose of 800 units, 8 c. c. Behring's standard No. 2 solution, will suffice, or 15 c. c. of a 1 to 50,000 solution Roux. For older children and adults 1,000 units should be given. In children who are already seriously ill or who already show the toxic effects, or in whom the larynx is involved, a dose of 1,500 to 2,000 units, 10–14 c. c. No. 3 is necessary.

If the symptoms do not abate, another 1,000 to 1,500 units may be given on the following day. In a few cases still a third injection is required. In a very few, a week or ten days after administering the antitoxin, a slight return of exudate may appear; here another moderate injection is indicated. Where these doses have not benefited, it is doubtful if larger ones will succeed.

TREATMENT OTHER THAN ANTITOXIN.

Since antitoxin is believed to act merely in hastening nature's process of recovery, and since it is certainly not sufficient to save all cases, it seems only reasonable that we should employ with antitoxin all other means, such as stimulants, inhalations and cleansing douches, which we have reason to believe have decided beneficial effects. The local treatment especially is indicated, as the serum has no direct effect on the life of the bacillus.

THE EFFECT OBSERVED IN CASES OF DIPHTHERIA TREATED WITH ANTITOXIN AT THE WILLARD PARKER HOSPITAL DURING THE FIRST FIVE MONTHS OF 1895.

With the exception of a few who died shortly after admission, I have personally watched the results of the treatment in all the cases. For the complete histories I am greatly indebted to the kindness of the Resident Physician, Dr. Somerset, and the Assistant Resident Physician, Dr. Bryant.

STATISTICAL SUMMARY OF RESULTS WITH SERUM.

The cases here considered entered the hospital for treatment between the 1st of January and the 1st of May, 1895. They include all patients received who had both clinical and bacteriological evidences of diphtheria. About five per cent. had, upon admission, only swelling and hyperemia. A certain number were received in a moribund condition; these are also included. Patients who after admission developed some other contagious diseases are also included, although they may have died after being transferred to another hospital. From January 1st to May 1st there were 255 cases admitted; of these 183 recovered, 71 died, and one still remains in the hospital, making a mortality of 27.8 per cent., or, if the case remaining in hospital should die, a mortality of 28.2 per cent. For the same months of the previous year there were admitted under similar conditions 211 cases, with 82 deaths, or a mortality of 38.8 per cent.

So far as I can judge from memory and from the hospital records, the cases were fully as severe as last year. The number having laryngeal diphtheria, indeed, was one-third greater, and these are the cases which contribute the majority of the deaths. The drop of over 25 per cent. in the mortality I believe to be due to the influence of antitoxin.

I feel compelled here and later to touch upon certain remarks made by Dr. Winters at a meeting of the New York Academy of Medicine, held April 4th, and published by him in pamphlet form. From his position as a visiting physician to the diphtheria hospital, and from the fact that he had studied from day to day the effects of the antitoxin treatment, his statements that the treatment had produced not only no good effects but many most dangerous ones, has had a great influence in deterring people from the use of antitoxin, not only in New York but throughout America where his statements have been quoted.

Dr. Winters, in opening his remarks, in order to break the force of a moderate improvement in the mortality of the cases admitted during the first three months of this year, as contrasted with the same months of last year, declared that diphtheria was far milder now than one year ago, and that this was shown clearly by the fact that in last December there were in the hospital eight successive recoveries after intubation, something never equalled since with antitoxin treatment. The hospital records, when consulted, do not bear out these statements. They show a mortality of 42 per cent. for all cases in December, and not one of all the thirteen cases intubated recovered. Diphtheria, as met with in the hospital before the commencement of antitoxin, was, therefore, of a severe and not a mild type.

If we consider the cases according to the day of the disease on which treatment was commenced, we find that of the 59 non-laryngeal cases in which treatment was begun within the first three days, but four died — a mortality of six and one-half per cent. One of these was septic from the start; in another the diphtheria was complicated with general tuberculosis.

Day treatment was begun.	Pharyngeal and Tonsillar.	Died.
1	4	0
2	28	2
3	27	2
4	36	7
5	24	4
6	15	5
7	7	2
8 and 9	13	4

The mortality in the 95 admitted after the third day was 22 per cent. In laryngeal diphtheria the mortality, as is seen in the table, was lower in the cases admitted within the first three days, but after that time no difference was observed.

Day treatment was begun.	Laryngeal Diphtheria.*	Died.
1	0	
2	6 [3]	[2]
3	21 [14]	11 [9]
4	20 [15]	13 [11]
5	14 [7]	7 [6]
6	9 [8]	6 [6]
7	4 [4]	4 [4]
8	10 [7]	[4]

* Cases in brackets were intubated.

The results noted by the New York City Health Department Inspectors in the cases injected by them throughout the city are very similar.

There is one consideration which I think is rather overlooked in estimating the mortality in those in whom the treatment is begun late. These must, from the nature of the case, have had severe diphtheria, otherwise they would not have remained sick so long, nor have sought treatment. The mortality would always be somewhat above the average in these cases, regardless of the influence of treatment.

Further, we have to remember that the facts obtained from the class of persons bringing their children to the hospital are not always accurate.

The effect of antitoxin in the treatment of laryngeal diphtheria is a matter of great interest. During the last five months of 1894, that is before the use of antitoxin, there were 36 intubated. Of these 23 died within four days. In 1895, during February, March and April, the months during which antitoxin of good strength was used, there were 53 intubated, with only 17 deaths, within the first four days. Among the 13 cases receiving no antitoxin, which lived more than four days, there were nine deaths after the fifth day, and of 36 receiving antitoxin, 17. Without antitoxin four recovered out of 36; with antitoxin, 19 out of 53.

Laryngeal cases which did not require intubation for the same months gave in 18 without antitoxin four deaths, and in 18 with antitoxin four deaths.

The element of chance in these results apparently so favorable to antitoxin must be considered; yet if the improvement continues it will be but fair to attribute it to antitoxin.

[Tables were here presented giving the cases of laryngeal diphtheria in consecutive order, also showing the cases ending fatally and the day of death.]

Mortality at different ages. Figures above the line relate to pharyngeal cases. Those below to laryngeal. Figures in brackets relate to cases intubated.

12 mos.		2d 12 mos.		3d 12 mos.		4th 12 mos.	
R.	D.	R.	D.	R.	D.	R.	D.
3	2	6	1	6	3	7	3
3 [0]	6 [5]	4 [2]	14 [1]	6 [1]	11 [8]	10 [6]	6 [6]

5th 12 mos.		5–9 yrs.		10–14 yrs.		15–30 yrs.	
R.	D.	R.	D.	R.	D.	R.	D.
17	2	24	1	14	1 meas.	53	1 T. P. & alco.
8 [6]		2 [1]	3 [2]			1 [1] died 3½ hrs.	

R — recovered. D — died.

THE BENEFICIAL RESULTS OF ANTITOXIN.

Upon the Local Process.— In the half-dozen cases in which I have made, or seen an injection made, within the first twenty-four hours of the disease, the results have been so remarkable that I have attributed them to the antitoxin. Following are the histories of two cases seen in private practice.

A boy, eleven years old, had had for twelve hours malaise, with pain on swallowing. Inspection showed the tonsils and portions of the palate to be covered with a soft, slightly adherent exudate. The boy was injected with 1,000 units, and twelve hours later his throat was clear and temperature normal. I do not believe this would have been a severe case without antitoxin, but the effect seemed magical.

The second case was a baby one year old, with a slight croupy cough for twenty-four hours, and stenosis just beginning. Temperature 102°, restless and without desire for food. Injected 500 units and found the baby the following morning practically well.

When the disease has progressed several days, and these cases are the ones seen in the hospital, the benefit is not so apparent. I believe, however, that a marked effect is still produced. In five months there has been only one case of pharyngeal or tonsillar diphtheria in which the membrane has increased after admission. I believe that the same result has taken place in laryngeal diphtheria. Four of these did indeed require tracheotomy after intubation, but I doubt if there was any actual increase in the extent of the membrane. The pseudo-membrane itself has seemed to me to separate somewhat more quickly than formerly, there being usually seen after thirty-six to forty-eight hours a line of demarcation separating the membrane and making it look like a slough ready to be cast off. The swelling of the throat tissues and of the glands of the neck appear to me to begin to abate earlier than formerly. The ulcerated surface left in some cases is covered with a soft exudate until healing occurs some days later. In laryngeal diphtheria if the intubation could be put off for eighteen hours it was avoided altogether. The time during which the cases remained intubated seem to me to be shorter than before the use of antitoxin. Many children coughed up their tubes in from twelve to forty-eight hours, and quite a number were able to do without them afterwards. Others required the tube from three to eight days. Exceptional cases occurred as previous to the use of antitoxin when the tube had to be worn for weeks. In but four did tracheotomy have to follow intubation. These all died. The general condition of patients seems to me to be beneficially influenced. The loss of appetite and the apathetic condition are less apt to occur, and when present seem more quickly relieved.

The Ill-Effects of Antitoxin Serum. — A small percentage of the cases had a slight rise of temperature immediately after the injection. As this is known to occur in a certain number of healthy children after an injection of serum for immunization, it is probably due to antitoxin. In seven cases abscesses developed at the seat of the injection. None of them were serious.

Rashes. — These are peculiar to the serum injections. They are undoubtedly partly due to the horse serum, not altogether to the antitoxin. The eruption may be limited to the point of injection, or may more or less completely cover the whole body. It most often appears as an urticaria, but may resemble scarlet fever or measles. In some cases all the forms may be united in one person. Following the eruption, desquamation may occur. There were in the 255 cases treated 48 having eruptions. In 12 of these there was a rise in temperature of from two to four degrees. This lasted from one to three days. In three children and one adult there was accompanying the rash great tenderness over the joints of the extremities. These pains lasted, in all but one, for less than four days. This last was a child in which the joint affection was more serious. The child, aged fifteen months, was admitted on April 25th, with severe stenosis. The temperature was 101°. The child was intubated, and did well. It received two injections of 1,200 units each. On the twenty-seventh day there was a macular eruption over the body; twenty-four hours later the joints of the hands and feet became intensely painful. The child dreaded the least handling. The knees and the two joints of the left thumb became more swollen, and appeared like acute articular rheumatism. Before the eruption developed, the child's condition was rendered more serious by the development of a broncho-pneumonia, which continued gradually to increase until death two weeks later. Examination after death showed pus in both knee-joints and in the two joints of the thumb. The surrounding tissues were inflamed and thickened. Both lungs were the seat of extensive broncho-pneumonia. The septic infection of the joints I regard as secondary to the inflammation caused by the antitoxin. The inflammation caused by it predisposed the joints to become the seat of a septic infection. This was the only case in which a complication caused by antitoxin seemed to have seriously influenced the health of the child. The urticaria or erythema, with at times accompanying rise of temperature is, indeed, in certain cases very distressing, and in a person already prostrated might not be wholly without danger to the patient. In no other cases than the one above did it seem, however, to influence the course of the disease.

I have seen no serious effects upon the heart, kidney or nervous system which I lay to antitoxin. Those of you who remember Dr. Winter's observations upon the first part of the cases reported here may wonder at this statement. He says that many babies have been brought to the Willard Parker Hospital with slight clinical evidence of diphtheria — babies, with the exception of a slight exudate in the throat, and perhaps a slight croupy cough, that were apparently healthy and with rosy color. They remain in good condition for about ten days after the injection of antitoxin, when on entering the ward you hear a moan, etc. These are the cases of antitoxin infection. The temperature charts show a record of 105° to 106°. The symptoms may gradually subside, leaving the baby weak and extremely anemic, or for days the temperature varies between 99° and 107°. This, he says, is due to the action of antitoxin on the blood and is antitoxin septicemia.

It would be difficult to recognize the children from the above picture. During the last four months there have been but eleven cases whose temperature reached 105°, and only three 106°. Eight of these fourteen cases had on admission severe laryngeal diphtheria, and were almost immediately intubated, and all but two of the fourteen had pneumonia during their high temperature. One of these two was septic from the beginning, dying on the sixteenth day, and the other was an eleven months' child with tubercular ulcerations on arms and legs. This child steadily grew worse, and died of exhaustion. In the months before the use of antitoxin, children with laryngeal diphtheria, if they lived long enough, very frequently developed septic bronchitis or pneumonia. These children frequently had high temperatures before they died. As these cases, under the use of antitoxin, in no wise differed from those seen formerly, and as they were less frequent, it does not seem to me reasonable to attribute them to antitoxin. Later, Dr. Winters gave three examples of different kinds of antitoxin infection, one acting on the kidneys, one on the nervous system, and one causing convulsions. A reader not cognizant of the facts would suppose from his account that they were all mild cases. In fact all three were severe laryngeal diphtheria on admission. I will give his account of the first case, and then that of the hospital records. His other two histories are equally misleading. In his pamphlet he states: "A second form of antitoxin infection was seen in the case of a little girl, aged thirteen months, admitted March 22d. Given the first injection of antitoxin immediately; temperature before injection, 101.6°; temperature six hours afterward, 104°. Second injection, March 23d; afternoon of the same day, kidneys ceased to act. Hot pack and other methods of treatment resorted to. Baby died, in spite of all treatment, on afternoon of March 26th."

The hospital records add the following points: "The child Mary Quade was admitted after nine days of sickness; when received, her throat and nostrils were filled with foul discharge. Abundant thin membrane covered tonsils, soft palate and pharynx. The child had intense dyspnea, and was intubated almost immediately after arrival. The day after admission paralysis developed, and fluids regurgitated through the nostrils." With these added facts we have a very different picture before us, and hardly need to lay the suppression of the urine or the fatal result to the 2,000 units of antitoxin. Time does not permit me to further show why I believe his other statements give an equally wrong impression.

The Limitations of Antitoxin. — Diphtheria antitoxin, so far as we know, has no action upon the cells in causing them to resist any poisons other than those produced by the diphtheria bacilli. Here we see at once a limitation in the cure of the complex disease called diphtheria, for it is as correct, for instance, to class some of the cases met with as pneumonia complicated with diphtheria as to call them diphtheria complicated with pneumonia. Upon the pneumonia, so far as it is not due to the diphtheria bacillus, we cannot hope that the antitoxin will have any curative effect. Another limitation is suggested by the results of experiments on animals. We know that after the infection has proceeded but a moderate distance it cannot be arrested by antitoxin. Experience seems to show that in human beings also the cells no longer react to antitoxin after a certain degree of poisoning has taken place, and this point in some cases seems to occur very early. I doubt if we are justified in saying that in these the actual lesions have progressed so far that without any further poisoning life has become impossible. I believe it may be possible that even after the administration of antitoxin the poison goes on producing further lesions.

There are cases in which even when the antitoxin is given early, it apparently fails to fortify the cells against the diphtheria poison.

In the hospital the effects of antitoxin upon laryngeal diphtheria, though in one way striking, are in another disappointing. More children live than formerly, but it seems as though still more should live. Many survive the acute infection, but many develop bronchopneumonia later and die. It has occurred in cases of diphtheria treated with antitoxin just as in cases not so treated, that a relapse may take place four or five weeks after recovering from the disease.

I give here, in closing, two instances of antitoxin limitation. Alice Means, aged sixteen years, a girl strong and well nourished, was admitted to the hospital on the third day of her illness; the glands of her neck, both tonsils and the peritonsillar tissues were greatly swollen. The whole area extending back into the pharynx was covered by a thick dirty-white adherent membrane, her nostrils were partially obstructed; temperature 99°, pulse 108. Her intellect was clear; 1,000 units of antitoxin injected; same amount injected twenty-four hours later. Thirty hours after her admission the swelling and infiltration were much less; membrane had lessened and was of more benign character. Her heart was irregular, but patient felt better; temperature was 99° and pulse 110. Four days after her admission her heart action became much more irregular and her pulse was but 66, falling the next day to 34. Patient had repeated attacks of heart failure, all nourishment was vomited so that stimulants had to be given by rectum. Patient died on fifth day. Autopsy showed extreme fatty degeneration of the heart and extensive degeneration of the other organs.

The second case is the following: Child, aged four years, admitted on February 11th, on the second day of the disease; was well nourished; temperature 101°; pulse 150, but of good quality; respiration 28. Examination showed the several glands moderately swollen; the tonsils to be much enlarged, but covered with only a moderate amount of membrane; nostrils free but showing some discharge. Three days later swelling of the glands of the neck less, exudate gone from the throat, temperature 103°, pulse 156, with a trace of albumin in the urine. On the seventh day child had an attack of urticaria; pulse and temperature a shade lower, but considerable albumin in the urine; eyelids edematous. The temperature then gradually rose until in two days it reached 105°, and there remained until death on the sixteenth day of the disease. This child had two doses of 1,500 units each.

The effects of the injection of antitoxin serum upon the blood of healthy children:

Dr. J. S. Billings, Jr., one of the assistant bacteriologists of the Department, examined very carefully the blood in fifteen babies after they had received doses of antitoxin for immunization. The children received from 200 to 400 units each. No alteration was discovered in the red or white blood-cells. The number of the white cells practically remained unchanged, The number of the red cells showed, however, in half of the cases, a very interesting change; in seven of the fifteen a gradual diminution in their number took place from day to day until by the sixth day there was a loss of from 200,000 to 600,000 in each 5,000,000 of their cells. After this date the number rapidly increased, until upon the fourteenth day the numbers had returned to their normal amount. In an adult receiving 1,200 units the same result took place. From 6,000,000 the count dropped to 5,400,000, and then returned to the normal at the end of ten days. None of these persons showed any evidences of anemia except in the examination of the blood. The cells contained their normal amount of hemoglobin. The blood of a number of cases of diphtheria treated with antitoxin was compared with that in a number in which no antitoxin was used. The diminution in the number of the red blood-cells was greater in those not receiving the antitoxin.

IMMUNIZATION AGAINST DIPHTHERIA.

The results in New York have been as remarkable as those obtained in Boston, as reported by Dr. Morrill. They have partly been published already, so that it is necessary to give them but very briefly.

At the Mount Vernon branch of the New York Infant Asylum,[2] a case of diphtheria developed on February 18, 1894. Cases continued to develop from time to time, so that in September alone fourteen cases occurred. From that time until January 14th there was hardly a day in which a case did not develop. On January 16th and 17th, 221 children were each injected with from 100 to 200 units Behring's serum. No bad effects were seen, and during the next month but one case of diphtheria developed. This was on the fourteenth day. From February 22d to 27th five cases appeared, and the children were again immunized. This time they each received from 125 to 225 units, Behring's standard, of a serum prepared under the direction of the New York City Health Department.

No case appeared after the second immunization for a period of five weeks. Cultures made from the throats of those in the neighborhood of this case showed diphtheria bacilli in the throats of six of the children. These six were given 200 units each on March 30th. One of these children developed a tiny patch two weeks later, but had no constitutional symptoms. A case developed on May 3d and one on May 27th in the children immunized on February 27th.

The hospital has remained so nearly free of diphtheria that no third general immunization has been thought necessary.

At the Nursery and Child's Hospital[3] in the three weeks preceding April 18, 1895, there were fifteen cases of diphtheria. Upon that day 136 children, varying in age from three weeks to four years, were immunized by receiving from 50 to 200 units each. The children showed no bad effects from the injections. A temporary rise in temperature occurred in one-fourth of them, which lasted for six to twelve hours. From the day of the injections to the present time no diphtheria has developed in the hospital, with two very interesting exceptions — a physician and a nurse who had not been immunized.

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[2] New York Medical Record, April 20, 1895. Report by Dr. Peck.
[3] Loc. cit., June 15, 1895. Report by Dr. Thomas.

Throughout New York City there have been over 200 persons immunized by the Health Department Inspectors in families where diphtheria has appeared. In only two of these has diphtheria occurred, and in these it developed within twenty-four hours. The lesions had probably already started before the injections were made. Both recovered.

CONCLUSION.

Diphtheria antitoxin has a distinct curative effect in diphtheria. The results are better when the injections are used early in the disease and when the diphtheria is uncomplicated with pneumonia or sepsis. The total amount required in the treatment of a case varies from 1,000 to 4,000 units, Behring's standard, and is determined by the severity and duration of the disease and the weight of the patient.

An injection of 100 to 200 units of antitoxin in a person will give an almost certain immunity from diphtheria for four weeks. If security is desired for a longer period the injection must be repeated.

Diphtheria antitoxin will not cure all cases of diphtheria even if given early in the disease. It does not destroy the diphtheria bacilli. It is desirable, therefore, with the antitoxin, to use other treatment, both local and constitutional.

The injection of diphtheria antitoxin with its accompanying horse serum is accompanied in a moderate percentage of the cases with disagreeable results, but in very few with any serious ones. No cases have been observed in which the kidneys showed any evidence of being seriously affected. It does not appear to have any deleterious effects on the blood, other than to cause a moderate temporary diminution in the number of red blood-cells, and even this is more than counterbalanced by its lessening the action of the diphtheria poison.

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ANTITOXIN IN DIPHTHERIA.

BY CHARLES F. WITHINGTON, M.D., ROXBURY, MASS.,
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The most important question that occurs to us as clinicians is, "Has antitoxin any curative value in diphtheria?" On this point I have some figures to which I will call your attention. They are obtained from the records of the City Hospital in Boston since the middle of 1890 when the "contagious service" was established. For six months of the year 1890, from July, there were 138 cases with 58 deaths — a mortality of 42 per cent. The following year 1891, there were 233 cases with 105 deaths — 45 per cent. The next year, which was one of thirteen months to February 1, 1893, there were 376 cases with 185 deaths — mortality of 49 per cent. In 1893 there were 389 cases with 203 deaths, or 52 per cent., showing a progressive increase in mortality every successive year, up to that which ends with the first of January, 1894. Coming now to the year which has just closed, with the first of February, 1895, antitoxin was used during the last seven weeks of that year, and during the first forty-five weeks the cases were treated in the old way. The average mortality for the previous four years is 48 per cent. In the year 1894 there have been 698 cases with 266 deaths, or a mortality of 38 per cent., or a fall of 10 per cent. from the average of four years. As to whether that diminution was a continuous one during the whole year or was limited to certain parts of the year: for the first forty-five weeks of the year, during the time that no antitoxin was used, there were 578 cases with 244 deaths, or a mortality of 42 per cent.; during the last seven weeks, when all the severe cases were treated by antitoxin, there were 120 cases with 26 deaths, or a mortality of 21 per cent., exactly one-half of the mortality for the previous forty-five weeks, and, you see, comparing still more favorably with the 48 per cent. which is the mortality for the whole period of four or five years previous to the use of antitoxin.

During these seven weeks it was my privilege to be on duty at the hospital and to use the antitoxin in these cases. The figures in regard to that treatment have been published, and I shall not trouble you to go into them again further than to say that, of these 120 cases during that period, only 80 were treated with antitoxin because the material was not sufficient to supply all the cases, and the remaining 40, mostly milder cases, were left alone so far as antitoxin was concerned. Of those 40 cases, 12 died, or 30 per cent.; the 40 cases included the mild ones and a few moribund ones where it was hopeless to give the material. Of the 80 severer cases 14 died, or a mortality of 17 per cent., and taking all the 120 cases together, those treated without and those with, the mortality is, as I have stated, 21 per cent. That is one answer to the important question as to whether antitoxin has any curative value. That question does not mean whether it will cure all cases, for the limitations have been carefully and accurately stated by Dr. Park; but that it has a beneficial effect upon the general mortality of a hospital and of any community in which it is used seems to me without much doubt.

A second question is, "Has the remedy any unfavorable effects?" The answer must be "Yes, a few." These are chiefly the cutaneous eruptions, which are awkward and uncomfortable, but not dangerous. I never have seen but one case where I felt that the use of antitoxin was open to criticism on account of safety. Within a week or two in private practice I have had a case where I had a good deal of anxiety, not to say alarm, from the use of it. It was the case of a lady with well-marked diphtheria involving one tonsil. As promptly as possible she received 1,500 units of the Behring solution, and with the effect of almost immediate amelioration of the symptoms so far as appearance of the throat went. Two days later the other tonsil began to be involved with rapidly increasing membrane. She again received 1,500 units, and with the result that after four or five days the throat was clear of membrane, and bacteriological examination showed it to be clear of the bacilli. But following that for about a week she was in a condition of a good deal of gravity, characterized first by local erythema, then general erythema, then intense urticaria, then by purpura of a good deal of severity involving both legs, and by severe pains accompanying the course of the nerves and possibly due to a neuritis. Her condition was one of high fever, delirium and a good deal of prostration. She has come out of it, and is now convalescent from the disease. The gravity of the symptoms referable to antitoxin in this case will lead me in the future to be a little conservative in its use in cases which appear at the beginning likely to be pretty mild. But while it has its limitations, and while it has its ac-

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[1] Remarks before the Massachusetts Medical Society, at the Annual Meeting, July 12, 1895.

cidents and ill effects in certain cases, it seems to me to possess the great preponderance of advantage in the treatment of severe cases; and I believe that the reduction of mortality at any rate far offsets any of those ill effects which we sometimes see.

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ANTITOXIN IN DIPHTHERIA.[1]

BY GEORGE G. SEARS, M.D., BOSTON,
Physician to Out-Patients, Boston City Hospital.

It has seemed to me, after listening to this series of able papers on the subject of diphtheria and its treatment, that the most interesting way in which I could take part in the discussion would be to give an account of the results obtained at the Boston City Hospital with antitoxin from February 1st, the date at which Dr. Withington's observations end, to May 31st. In the short time which is allotted me it will be possible to give these results in a rather broad way only, reserving fuller details for some other occasion.

Whatever may be thought of the value of statistics in proving the worth of any form of treatment, it is certain that antitoxin for the present, at least, will be judged chiefly by the figures which are supplied by institutions in which a large number of cases of diphtheria are treated. Yet for purposes of comparison between the present and the past, there is a decided choice in the way such figures are presented. The mortality-rate may be deduced only from the cases in which the serum was injected, or it may be made up from the total number admitted, whether they received it or not. So long as it was not withheld from a lack of supply, but only because the disease either seemed too mild to require it or had already reached the stage where no treatment could avail, the latter method seems unquestionably the fairer, since it entirely eliminates the personal factor in the selection of cases, and gives no ground for the suspicion that the severe ones failed to receive treatment, lest they should spoil the statistics. In the present instance, however, the difference is very slight.

In gathering the following figures, based on the cases admitted between February 1st and May 31st of this year, I have not made the bacteriological examination the supreme test, since I have included several fatal cases which either died so soon after entrance that no cultures were made, or else were such typical cases that the failure to find bacilli on one or two attempts seemed without much doubt to be due to accident. In every case which recovered, however, the diagnosis was made in the laboratory. As a result, a higher death-rate is given than perhaps actually occurred; but if antitoxin can stand this form of treatment, so much more credit is due it. Under this classification, within the period mentioned above, 238 cases were admitted, of whom 60 died — 193 being treated with antitoxin, with 47 deaths. If these figures be added to Dr. Withington's, which have already been reported, a total of 358 cases and 86 deaths is given, with a percentage of 24, as opposed to 290 admissions during the same period last year, with 137 fatalities (47.2 per cent.). If we exclude 36 cases which entered moribund, and died within forty-eight hours, and six whose death was not connected with diphtheria, the mortality-rate is reduced to 13.9 per cent. A comparison of the results obtained in the operative cases, either intubation or tracheotomy, is just as striking, not only in the proportion of recoveries but also in the marked reduction in the number in which such interference was necessary. Of the 290 cases treated a year ago, 77 (26.5 per cent.) required operation, only nine recovering, while in the larger number treated this year operation was necessary in but 41 (11.5 per cent.), and of these 17 recovered. Of the 24 deaths, 14 occurred within twenty-four hours after admission, while 10 received no antitoxin. Of the 31 cases treated by the serum 17 recovered, 54.8 per cent., while in 7 of the 14 fatal cases, operation, injection and death all occurred within twenty-four hours after entrance. As I look back over the past few months I do not think that this marked improvement can be accounted for by any change in the severity of the disease. It has seemed to me that the normal number of serious cases had been admitted, an opinion which is shared by other men who have been following the work there, while similar results obtained in other hospitals all over the world make it extremely improbable that so sudden and universal a change should have occurred. Nor do I think that the smaller number of operative cases and the larger number of recoveries are to be accounted for by any alteration in the type of the disease, but rather that the reduction in the number of such cases, judging from the effect produced in the visible membrane in the throat, is due to the action of antitoxin, partly in preventing the extension of the membrane downwards, and partly in arresting its further development in cases where the larynx is already involved and in hastening its disappearance, since time and again patients were admitted on the borderline of operation, in whom the disquieting symptoms rapidly subsided under antitoxin, steam and calomel sublimations. That antitoxin does not always shorten the time during which the tube is worn is sufficiently well shown by the fact that it was not permanently removed till the seventh day in one patient, the eighth in one, the tenth in one, the twelfth in one and the eighteenth in another. Of the other eleven successful cases it was worn one day by one,[2] two days by two, three by one, four by two, five by four, and six by one; the average time being six days.

Regarding the local changes in the visible membrane in the throat, in none of the cases which have come under my own observation have any extraordinary effects been seen; although large pieces have occasionally exfoliated as under any form of treatment, it has usually disappeared in a perfectly orderly manner. The most remarkable effect produced in the membrane has been its failure to extend except in rare instances, and in many of these the advance seemed to have been permitted by the small size of the dose, a second injection being often sufficient to check further progress; as a result the active stage of disease is shortened, the membrane disappears sooner, since less is formed, septic absorption is diminished, and the swelling of the cervical glands and the infiltration of the tissues of the neck rapidly subside. In some of the cases, even of those accompanied by the constant oozing of a fetid bloody discharge from the nose and mouth, where sepsis had already produced such serious cellular changes that recovery was impossible, the local effect on the membrane and the improvement in the child's sense of comfort and in his mental condition seemed to justify its use. It has often seemed in such cases that antitoxin had done all that could be expected of it in counteracting the diphtheria toxine, the patient dying not because it had failed to do its proper work, but because it is no more able to excite a dead cell than is electricity to stimulate a dead muscle. Such failures suggest that these cases might have been saved by an early injection, but the death of a few where treatment was begun within the first two days proves that some other factors beside time are at work, which may not be clinically evident, perhaps a mixed infection.

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[1] Remarks before the Massachusetts Medical Society at the Annual Meeting, July 12, 1895.

[2] This patient died, six weeks later, of scarlatina.

The story of antitoxin is, however, not all told in chronicling only its good effects; unfortunate accidents have undoubtedly followed its use, but the cases which have come under my own observation have been practically free from such results. Various forms of skin eruptions have been comparatively frequent and have at times been attended by considerable constitutional disturbance and fever and the appearance of a trace of albumin in the urine, but the condition of the patient was never such as to give rise to anxiety. In some half-a-dozen of these cases the joints became swollen, tender and painful, but this almost invariably passed off within forty-eight hours. Rarely after one injection the eruption reappeared ten or twelve days later, the relapse being at times accompanied by more serious symptoms than occurred with the first manifestation.

In a disease where complications are common under any form of treatment, the evidence must be very conclusive before the charge that antitoxin is responsible for the occurrence of endocarditis, broncho-pneumonia, nephritis and paralysis can be sustained, and is not supported by the cases now under consideration. In order to determine in what proportion such complications existed, I have gone carefully over the records of these 238 cases, but regret that the figures obtained can be regarded as only closely approximate, since the histories are not always sufficiently explicit; but when doubt existed I have tried to err on the side against antitoxin. All cases, for example, have been classed as broncho-pneumonia in which slight signs in the lungs, as noted in the records, were accompanied by a rise in the respirations and temperature, though in many of them the process in all probability was confined to the bronchi, and I have also included those cases in which it developed during the course of scarlet fever acquired subsequent to admission. Those in which it existed prior to the injection are naturally excluded. Under such a system 25 instances were found, in 11 of which it evidently contributed to the patient's death. The occurrence of traces of albumin in the urine was common, as it always has been, at times immediately following the injection of the serum, once or twice in large amount. In a certain proportion of the cases, as Dr. Morrill's statistics show, this must be looked upon as its result, though in others it was probably an accidental coincidence. In a few cases in which both a chemical and microscopic examination of the urine was made before and after its use by Dr. Ogden, no change was discovered. In only 25 cases did the amount of albumin rise to as much as a large trace as reported from the laboratory, while in only one, the fatal issue being preceded by convulsions, could the condition of the kidneys be considered as taking more than a very remote part in causing death.

The discovery of only four cases of paralysis among the records, only one of which seemed likely to be serious, may be in part accounted for by the fact that it is often of late development, and may have come on after the patient's discharge. It is also possible that some slight cases, when it was confined to the throat, were overlooked, but the figures even then give no support to the idea that it is more common after antitoxin than under other circumstances. Cases where systolic murmurs developed in the cardiac area were sufficiently common, and many of them persisted till the patient's discharge, but as most of the patients were under observation but a short time it is impossible to say how many were permanent, and statistics on this subject would have little value either way.

With the use of antitoxin as a prophylactic measure my experience is limited to about a dozen cases, all of whom escaped the disease. The infection of the two gentlemen who preceded me in charge of the wards, and my own escape after an immunity dose of 250 units of Behring's serum, is probably nothing more than an odd coincidence.

Before the 8th of April almost all of the cases were treated by Behring's antitoxin, or that furnished by the Pasteur Institute of New York; but in a few instances Aronson's was also used; since then a supply has been most generously provided by our State Board of Health, sufficient for most of the patients who needed it, and I am very glad of this opportunity to acknowledge our indebtedness to them, and to congratulate them on the prompt way in which their material was furnished to the profession, and the success which has attended its use.

Under ordinary circumstances the patients received a dose varying from 500 to 1,500 units on the day of entrance, and again on the following day or the day after, if the progress of the case seemed to require it. In a few of the fatal cases very much larger amounts were given, while some of the successful results followed the injection of 100 c. c. (1–50,000) of the State Board of Health product given in the course of six or seven days. Contrary to the opinion which I understood Dr. Park to express, there seemed at times a distinct advantage in these large doses.

The anterior and outer surface of the thigh was the site usually selected for the insertion of the needle, and the local reaction was usually slight, though a few of the children complained of considerable pain on movement of the leg for the first twenty-four hours or so. In order to avoid the possibility of any interference with the performance of their duties by lameness, several of the house-officers, who took an immunity dose, selected the upper arm for the seat of the injection, and in nearly every instance it was followed by marked swelling, which was accompanied by intense itching. In four or five cases an abscess resulted, but as this also followed in a few instances during the same period the hypodermic injection of a drug, and ceased after a serious conversation with those who were responsible for the administration of the serum, they were probably the result of some failure in technique.

Other treatment consisted in the use of iron, brandy and the cardiac stimulants, feeding by the nasal tube being resorted to in appropriate cases with apparently brilliant results. The only local treatment was the irrigation of the nose and throat, when the child did not resist too strenuously, with a normal salt solution, or with Dobell's. After the membrane had disappeared, an effort was made to hasten the departure of the bacilli with mild peroxide of hydrogen solutions, boracic acid or lemon juice. Croupy cases were treated with steam and calomel sublimations.

In conclusion I would say that the careful observation of these cases, most of which were under my care during a portion at least of their illness, has changed my position from that of a good deal of scepticism regarding the value of antitoxin to one of considerable optimism. While it has not fully justified all the claims of its most ardent supporters, since death sometimes occurs even when the injections are made early in the disease, in cases which seem clinically appropriate, a marked reduction in the mortality-rate has followed its use. In the rank and file of cases the exfoliation of the membrane is hastened, the amount of septic absorption is diminished, and the danger from this source therefore decreased, while of those which are complicated by laryngeal stenosis, a smaller proportion require operation, and of these a relatively larger number recover. Even in hopeless cases the membrane may clear up under its use, while its effects in counteracting the diphtheria poison are frequently seen in the brighter mental condition and improved sense of well-being of the patient. Unfortunate results have occasionally followed, perhaps from some idiosyncrasy on the part of the patient, perhaps from some chemical change or decomposition in a particular specimen, but whatever its cause, in the face of its many advantages, such accidents should no more deter us from its use than the occasional death from ether should prevent its employment as an anesthetic, though it might suggest some limitation to its administration as a routine practice to every patient. Even if all the cases of broncho-pneumonia or albuminuria which were observed could be ascribed to it — an impossible task in a disease where such complications are common under any form of treatment — they are more than offset by a reduction of fifty per cent. in the mortality-rate.

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Clinical Department.

A CASE OF ANEURISM OF THE THORACIC AORTA.[1]

BY SARAH M. CRAWFORD, M.D.

E. F., married man, sixty-four. Born in Basel, Switzerland. Came to Massachusetts in 1858. Clerk in banking-house in Boston over thirty years.

Family history good. Grandparents, uncles and aunts died at advanced age. Parents died of pneumonia — father at fifty, mother at seventy-two.

Patient was five feet, ten inches in height, erect, broad-shouldered and compactly built. Normal weight about 185 pounds. Complexion and eyes dark; hair originally black, not much whitened by age. Health always robust until three years ago, when he received a blow on his chest over the region of the heart. He was struck, while crossing Devonshire Street in Boston, by iron pipes or railroad iron which projected from the end of a loaded wagon or truck. He had waited for the team to pass, not seeing the projecting irons, which struck him as the team whirled round the corner. He did not fall, but was faint and sick. He went at once to his office in State Street, closed up for the day, and went to his home in Longwood Avenue, Roxbury. He continued to feel faint, sick and shaken up; took claret frequently through the afternoon and evening (using an entire bottle); could not eat dinner, and sat up very little. His wife applied wet compresses and arnica. The next day was Sunday. He remained in the house, resting on the sofa throughout the day; no particular pain, but lame and sore. The skin over his chest was quite extensively discolored. His wife said that the discoloration covered a place as large as her two hands. Monday he resumed his ordinary occupation and said very little about his injury. In a few days he appeared to be as well as usual; but he soon began to have a slight cough, to which he paid little attention.

In November, 1892, he had an attack of what he called *la grippe*; did not consult a physician; went to his office every day and did his usual work, favoring himself when he could by sitting instead of standing at his high desk, as was customary with him. He felt weak and miserable, but would not give up. He never felt well afterwards. His cough grew worse; he had occasional shooting pains in his chest; his throat was troublesome; and he complained of shortness of breath, and of weight about the chest.

He consulted Dr. Wm. Wesselhoeft; was under his care a few weeks. Cough did not improve, although not very distressing and not constant. He then consulted Dr. Greene, of Nervura fame; afterwards, Dr. Copeland, under whose care he remained about six months, going to his office twice a week for treatment of nose and throat.

In January, 1894, through the influence of his wife, whose family physician I had been for many years, he consulted me. He now weighed about 170 pounds. He complained of cough, choking, and inability to swallow solids, and of dyspnea after exertion, irritation of the throat and pressure on or in the chest. He had occasional shooting pains in chest; appetite fair; bowels regular; sleep good. His cough was laryngeal, loud and barking, with a metallic ring. Upon examination, I found tongue normal, throat dark and congested, the mucous membrane of the whole pharynx much swollen, and the uvula twice its normal size. There were two irregular streaks about an inch long, extending longitudinally on the posterior wall of the pharynx, where the mucous membrane looked rough and granular.

Physical signs: By inspection there was a lack of elasticity in the movements, and a slight difference in the size and shape of the two sides of the chest in front, the left being the more prominent; in the back the right side just below the scapula was more prominent than the left. The percussion note on the right side was a little higher in pitch, and tympanitic. On the left there was diminished resonance. By auscultation, the respiratory sounds were heard more distinctly over the right than over the left chest, and occasional sibilant and sonorous râles were heard over both lungs. The area of heart dulness was normal, and nothing abnormal was detected in the sounds or rhythm of the heart. Pulse was 78. I prescribed sulphate of strychnia (one-thirty-second of a grain), and cod liver oil, three times a day. I treated the throat by applications of tincture of iodine and glycerine, equal parts, and prescribed a solution of bicarbonate of soda in the proportion of a drachm to a pint of water for spraying the throat, and hot-water gargles.

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[1] Read before the Norfolk District Medical Society, December 28, 1894.

I saw the patient frequently for a few days, then occasionally through the winter and spring. His general condition seemed to improve under treatment, although the choking at meals occurred occasionally. During the summer he was so much improved that I did not see him at all. Late in August he took a severe cold from going without his overcoat, his previous symptoms were aggravated, and he grew rapidly worse.

October 26th I was called to attend him at his home. I saw at once a marked change for the worse. He had lost 15 pounds, was weak, and had an anxious, careworn look. He could take little solid food without choking and strangling. He complained of severe pain in his right side; it seemed to follow the course of the right eighth intercostal nerve. Distressing dyspnea followed slight exertion. He suffered great prostration and pressure in his chest. His cough was hard, suffocating, and followed by slight expectoration of thin, glairy mucus. Upon examining the chest I found very little change since my former examination, except that the respiration seemed less in the left lung, and the breathing was stridulous. I now felt sure that there was some growth or tumor pressing on the left bronchus or trachea, the esophagus and pneumogastric nerve or the recurrent laryngeal. Respirations were 30. Pulse 84, small. Temperature normal. I prescribed a hot-water enema to be given at once, one-eighth of a grain of sulphate of morphia, by mouth, to be repeated in two hours if necessary, and a large hot linseed poultice over the painful side, and advised patient to remain in bed until my next visit.

The next morning I found patient free from pain; he had slept but little, and seemed exhausted. He complained more of pressure in his chest, and asked for something to loosen his cough. I left sulphate of morphia, to be taken as required, and directed the chest to be rubbed with compound camphor liniment. Temperature normal. Respiration 24. Pulse 80. Patient wanted to get up, but I advised him to stay in bed another day, and then consult Dr. F. I. Knight. He had never experienced any difficulty in lying down, although he rested better on his left side than on his right.

Two days later I saw him again; he was sitting up, and there was no appreciable change in his condition. Arrangements were made for him to go to Dr. Knight's office for examination and treatment; and from October 29th to November 20th I did not see the patient, but I heard from him frequently through Dr. Knight and the family of the patient.[2]

November 20th, 21st and 26th, I was called to attend him at home — on the 20th, for diarrhea. On the 21st I examined his chest inch by inch; but I failed to find any further evidence of what I suspected. His weakness and dysphagia had increased, so that it had now become necessary for him to extend his neck and elevate his shoulders, bringing them forward, in order to allow liquids to pass into the stomach. His cough was frequently followed by strangling, retching or vomiting, and the vomited matter was streaked with blood. His weight was reduced to 150 pounds. Pulse 96. Respiration normal.

On November 28th the patient died suddenly and quietly, at about seven o'clock in the evening. He had been up and about his rooms as usual, but he had been rather more restless and much weaker than at any time during his illness. About ten minutes before his death he had an attack of vomiting, soon after which he fell back exhausted. I was sent for, and upon my arrival found that I was too late. The patient probably died when he fell back. I found that the vomited matter contained a small amount of blood, probably not more than an ounce, perhaps less.

November 29th an autopsy was made by Dr. H. W. White, whose report I append:

Autopsy. November 29, 1894. Man about sixty, fairly well nourished and vigorous. No external signs. On opening chest found both lungs free and spongy; slight hypostatic congestion on back of each lung; no fluid in pleural cavities. Opening pericardium, found about two ounces of clear, yellow serum; just above the heart, in median line, a tumor the size of two fists, filling the mediastinum completely. Desiring to remove this tumor and preserve its contiguity with other organs, the chest was emptied *en masse.* This tumor gave the sense of crackling to the touch, was collapsible, and apparently intimately connected to a part of the arch of the aorta and its branches. Both lungs were removed, and the rest of the specimen preserved entire. It was found to be a very much enlarged aorta. The aorta was opened along its posterior wall; it showed extensive atheromatous degeneration and calcification. From its commencement at the aortic valves it was evenly enlarged to twice its ordinary calibre. At this point the inner wall of the dilated aorta was soft and ragged, and filled with clots. This pressed against the esophagus, primary bronchus, and its branches reaching towards the left lung. There was no sign of complete rupture, and death resulted apparently from the extensive pressure upon all the vessels, nerves and contents of the mediastinum.

Medical Progress.

REPORT UPON FOOD, DRUGS AND ARTICLES OF DOMESTIC USE.

BY BENNETT F. DAVENPORT, M.D.

RELATIVE DIGESTIBILITY AND NUTRITIVE VALUE OF OLEOMARGARINE AND NATURAL BUTTER.[1]

Although the statements made as to the relative value as food of natural butter as compared with margarine have varied, yet the general outcome has been that, while there was not much choice between them, yet as a whole butter had a slight advantage. This has lead Dr. Adolph Jolles to carry out a long series of observations upon dogs fed during four consecutive periods alternately with natural butter and with margarine. All the discharges were examined daily for unassimilated fatty matter. In the first and second periods more fat and less carbohydrates were given; in the third and fourth, less fatty matter and more carbohydrates. Butter was used in the first and third periods, and margarine in the second and fourth. The other articles of food used, such as wheat-méal, sugar, etc., were all of ascertained composition, and were made up into dog-biscuit, so that the amount of the different kinds of food constituents consumed during each period were accurately known. It was thus possible to trace out during each period the proportion of proteids, fat, non-nitrogenous or mineral matters which were either digested and assimilated, or passed undigested. From 97 to 98 per cent. of the fatty matter was uniformly digested, whether it was butter or margarine which was used. During the first and third periods, while butter was given, 98.4 and 97.1 per cent.; and during the second and fourth, while margarine was used, 97.9 and 97.3 per cent. of the fatty matter given was digested. It thus appeared in this experiment, where proper care was taken to have all the conditions similar, that natural butter and manufactured margarine had practically identical coefficients of digestibility and nutritive value.

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[2] Dr. Knight's notes of the case show that by "physical signs" the results of his examination were as negative as my own.

[1] Sitzbericht: Kaiserl. Akademie in Wien, 6th März, 1894.

An item is going the rounds of the newspapers as to the relative frequency of bacteria in natural butter and in margarine, which considering the manner of production of the two articles seems reasonable. According to the item, average natural butter has been found to contain from ten to twenty millions of microbes to the gramme, while average margarine had but four to six million. The maximum found in butter was forty-seven millions, while in margarine it was but eleven. While cold reduced the margarine microbes from six and a half millions to about one-thirtieth of that number, it, in the case of natural butter, reduced them only one-third part of what they were before. In neither natural butter nor margarine were any pathogenic bacteria found.

WINES PRODUCED IN CALIFORNIA.[3]

Samples of the 194 brands of California wines represented at the Chicago Columbian Exposition were afterwards analyzed in the laboratory of the United States Department of Agriculture at Washington by Dr. W. H. Krug. The wines were from all the important districts in the State, and included all the various types grown. These were judged as to their quality by the standards adopted in Germany, upon the report of the Imperial Commission, although these might not be absolutely fair to wines grown under different climatic and soil conditions. In only a few samples was any sediment noticeable, most of the wines, both white and red, presenting a fine appearance, showing that they were well matured before being bottled.

Only three samples exceeded the German limit for potass. sulphate, thus showing that plastering had not been excessively used. When it is remembered that it is the sweet wines of Southern Europe which are the ones preferred for medicinal use, and that it is these same wines which are the ones most extensively plastered, the advantage of the sweet wines of California for such use, as none of them were found to exceed the German limit, can be appreciated. Many of the wines had, however, been excessively sulphured in the fumigation of the casks for the prevention of oxidation and of the growth of mycoderma in the wine; 33 out of the 87 wines examined in regard to this particular, have been excessively treated. This custom of fumigating wine casks with sulphur has been in general practice among wine producers for centuries, and nothing better, when properly used, has yet been discovered. In only four of the wines was any salicylic acid found.

On the whole it was evident that the California dry wines are fully equal to the European wines, and the red wines are in every respect superior to the young French clarets. The sweet wines are to be unconditionally preferred to those of Europe containing the same amount of alcohol and extract as not being plastered. This superiority is already being appreciated in Europe; and it is only a question of time when an extensive foreign market will be open to this, one of the most promising American home products.

LIQUORS OF GOOD STANDARD QUALITY DEFINED.

The following extract is from Senate Bill No. 180, which was introduced before the State Senate last winter for the purpose of so amending the present statute relating to intoxicating liquors as to define the phrase, "good standard quality." The words are used in the statute, but are of no effect, not having a definite meaning. The bill was, however, pigeonholed by the committee, but may appear again before another legislature.

> Section 1. Section nine of chapter one hundred of the Public Statutes is hereby amended by striking out all the words of the third clause thereof and substituting therefor the following:
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> "*Third.* That no spirituous or intoxicating liquors shall be sold, exchanged or delivered, or exposed, offered or kept for sale, exchange or delivery, upon the premises described in any license except such as are of good standard quality, and such as are free from any adulteration prohibited in the Pharmacopœia of the United States, and under the several acts relating to adulteration of food and drugs for either a food or a drug. And if marked, labelled or represented as being the product of any foreign country, they shall also be of the standard quality required for their legal sale for domestic use in the country of their reported production. All such liquors as are sold, exchanged or delivered, or which are exposed or kept for sale, exchange or delivery, under a license of the sixth class shall be of the quality required for their sale as drugs under the provision of the acts relating to the adulteration of food and drugs.
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> "All spirituous or intoxicating liquor shall be deemed, for the purpose of this act, not to be of good standard quality, if upon analysis it shall be found: in the case of a malt liquor or beer, to be anything other than the alcoholic liquid, the legitimate and exclusive product of the fermentation with yeast of a wort made from barley, malt and hops; except it be a malt liquor or beer distinctly labelled or otherwise plainly designated by a distinctly qualifying descriptive name, in which case the malt may be wholly or in part replaced by any wholesale malt substitute, which is plainly indicated by the descriptive name. It shall also be deemed not to be of good standard quality, if it be cloudy with yeast, or if it contains more than fifty grains of sodium chloride to the gallon:
>
> "In the case of cider, to be anything other than the alcoholic liquid, the legitimate and exclusive product of the fermentation of pure apple juice:
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> "In the case of a wine, to be anything other than the alcoholic liquid, the legitimate and exclusive product of the fermentation of the pure juice of fresh grapes, and containing from ten to fourteen per cent. by weight, or twelve and four-tenths to seventeen and three-tenths per cent. by volume, at the temperature of sixty degrees Fahrenheit of absolute alcohol; except it be a wine distinctly labelled or otherwise plainly designated as a 'fortified sweet wine,' in which case it must be one which has been fortified with wine spirits, and which is in full accord with the 'regulations and instructions' issued by the United States internal revenue bureau concerning the 'fortification of pure sweet wines' under the revenue acts of the United States; or except it be a wine distinctly labelled or otherwise plainly designated by a distinctly qualifying descriptive name as the product of some other fruit juice than the pure juice of fresh grapes; in which case it must be the product of the fermentation of the pure juice of the fruit plainly indicated in its descriptive name, but it shall be of like character in all other respects to that produced from grapes, except such as are necessarily implied in its descriptive qualifying name:
>
> "In the case of a brandy, to be anything other than the alcoholic liquid, the legitimate and exclusive product obtained by distillation from fermented unmodified juice of fresh grapes, and which since its distillation has been stored for at least four years, and which contains from thirty-nine to forty-seven per

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[3] Journal of American Chemical Society, September, 1894.

> cent. by weight, or forty-six to fifty-five per cent. by volume, at the temperature of sixty degrees Fahrenheit of absolute alcohol; except it be distinctly labelled or otherwise plainly designated by a distinctly qualifying descriptive name as apple brandy, peach brandy or some such like fruit brandy other than grape; in which case it must be an alcoholic liquor of like character in all other respects to that produced from grapes, except such as are necessarily implied in its descriptive name:
>
> "In the case of a whiskey, to be anything other than the alcoholic liquid, the legitimate and exclusive product obtained by distillation from a mash of grain, wholly or in part malted and which since its distillation has been stored for at least two years, and which contains from forty-four to fifty per cent. by weight, or fifty to fifty-eight per cent. by volume, at the temperature of sixty degrees Fahrenheit of absolute alcohol, and which is distinctly labelled or otherwise plainly designated as a bourbon, rye, corn or other brand of whiskey, by a distinctly qualifying descriptive name, according to its manner of production:
>
> "In the case of a gin, to be anything other than the alcoholic liquid, the legitimate and exclusive product obtained by distillation from a fermented mash of grain, wholly or in part malted and rectified from juniper berries, and which contains from forty-four to fifty per cent. by weight, or fifty to fifty-eight per cent. by volume at the temperature of sixty degrees Fahrenheit of absolute alcohol, except it be distinctly labelled or otherwise plainly designated by a distinctly qualifying descriptive name as produced in some other manner, in which case it shall be an alcoholic liquor of like character in all other respects, except such as are necessarily implied in its descriptive name:
>
> "In the case of rum, to be anything other than the alcoholic liquid, the legitimate and exclusive product obtained by distillation from fermented molasses or other product of the sugar-cane, and which contains from forty-four to fifty per cent. by weight, or fifty to fifty-eight per cent by volume, at the temperature of sixty degrees Fahrenheit, of absolute alcohol."

BORIC ACID IN FRUITS.[3]

Since the use of boric acid as a food preservative has become general, it has been of interest to learn if some of this same element was not also naturally present in fruits and their products. In most of those examined for this purpose it has been found, notably so in grapes and wines. Dr. E. Hotter of the Fruit Experiment Station at Graz now reports that the apples examined by him were found to contain from 2.8 to 12.0 parts of boric acid in 100,000 parts of their dry substance; the pears 6.0 to 11.4 parts; and figs 2.2 parts of boric acid.

COPPER IN PRESERVED FRUITS AND VEGETABLES.[4]

Prof. A. Tschirch, of Bern, has recently published the results of his experiments of the action of copper solutions on plant life. He found, as had also Rumm, Frank, and Krüger[5] that plants which had been sprinkled with weak noncaustic solutions of copper made a more vigorous growth than those which had not been so treated. He claims to have proven from the results of his investigations that the presence of copper, to the extent of not exceeding 50 milligrammes in a kilogramme of preserved vegetables, is of no hygienic importance. The governments of Italy, cantons of St. Gall and Basel, have now legalized the presence of copper in twice as large a quantity, that is, 100 milligrammes in a kilogramme. France had previously allowed of a similar quantity.

According to the report of R. Kobert,[6] he obtained from the red-blood coloring matter of animals which had had tartrate of copper solution injected into their circulation, a copper-holding substance similar to hemoglobin, and which he has named copperhemol. This substance E. Merck, the manufacturing chemist and pharmacist, has now introduced into trade as a blood tonic. According to Cervello[7] copper sulphate in doses of 20 to 30 milligrammes, when mixed with milk-sugar and taken before meals twice daily, will act as efficiently as a blood-former as will iron itself.

ANTIMONY IN ENAMEL-WARE COOKING UTENSILS.[8]

P. Kassper reports finding a brand of glazed cooking-ware which yields a notable quantity of antimony to boiling organic acids. Upon analysis he found the glaze to contain silica 39.8 per cent., alumina 10.4, boric acid 14.92, antimony oxide 14.82, tin oxide 1.19, phosphoric acid 2.73, soda 8.92, potass. 7.72, and zinc 0.36 per cent.

THE BRETON VEGETABLE FOOD COLORS.[9]

Dr. G. Possetto, of Turin, reports that he finds the much advertised Breton vegetable food colors to be as follows: The yellow is a tin-oxide lake of yellow fustic, the blue an indigo carmine, the green a mixture of these two colors, the red a tin-oxide lake of cochineal, the orange a mixture of the red and yellow, the violet a mixture of the red and blue, while the brown was a tin-oxide lake of no specially recognized vegetable color. Thus six out of the seven colors are tin-oxide lakes containing some 75 per cent. of the tin oxide in the dry color. As containing this tin, they are forbidden to be sold as food colors in Germany.

MILK FOR CHILDREN'S USE.[10]

The Canton of Basel, in May, 1894, passed an act concerning foods, which provides that milk for children's use shall not be sold if it will deposit any sediment upon two hours' standing, or if it has been kept unsterilized as long as four hours since it was milked from the cow. These conditions are additional to its being of good quality otherwise.

FORMALDEHYDE AS AN ANTISEPTIC.[11]

The previously reported efficiency of formaldehyde, or formic aldehyde, as an antiseptic and disinfectant has received further confirmation. This with its nonpoisonous character, easy volatility, and freedom from corrosive or other damaging action on fabrics, commends it for many purposes of practical disinfection. It immediately removes the offensive odor of putrid urine, feces, or carrion. Its activity as a germicide, according to A. Trillat, is equal to, if not superior to that of corrosive sublimate.

Reports of Societies.

FIFTH ANNUAL MEETING OF THE HARVARD MEDICAL ALUMNI ASSOCIATION.

(Continued from No. 6, p. 142.)

THE PRESIDENT: I will ask Dr. Chadwick to read to you the report of your Committee upon the Harvard Medical School:

REPORT OF THE COMMITTEE ON THE HARVARD MEDICAL SCHOOL.

The all-absorbing interest in the Medical School is centred in the development of the obligatory four years' course of study. In 1894 the last regular class under the three years' course graduated; this year there is no regular graduating class, nevertheless, sixty-seven men take their degrees. They consist of those who took the optional course of four years, and of those who postponed graduating last year because they were to enter hospitals, or of those who failed to pass the examinations at the completion of their three years' course.

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[3] Zeitsch. Nährungs-Mittel-Untersuch, and Hygiene, 1895, 1.
[4] Zeitsch. d. Allg. östern, Apoth., Verein, 1894, 831.
[5] Bericht. d. deutsch. Botan. Gesellsch, 93 and 94.
[6] Deutsch. med. Woch., 1895, 1 and 42.
[7] Wiener med. Blatt.
[8] Zeitsch. f. Nährungs-Mittel-Untersuch, and Hygiene, 1895, 104.
[9] Loc. cit., 1895, 150.
[10] Veroff. Kaiserl. Gesundheitsamt 1894, 850.
[11] British Year-Book of Pharmacy, 1894, 233.

Seven receive the M.D., *cum laude*, and the A.M.
Five " M.D., *cum laude*.
Nine " M.D. after the voluntary four years' course.
Forty-six " M.D. after three years' course.

The influx of students has not been appreciably diminished by the extension of the course to four years, as this summary of the students in attendance during the past year shows:

In courses for graduates, 1894–95 (to Dec. 1)	18
Fourth class	33
Third class	98
Second class	123
First class	182
Total,	454

If the next entering class is larger, or even as large, as the last, the capacity of the building will be taxed to the utmost to provide tables in the dissecting-room and desks in the laboratories, etc. Plans for securing more room are being earnestly debated by the Faculty. The lot of land is not large enough to allow of more than a small addition to the present building, and it seems improvident to expend seventy-five or one hundred thousand dollars to enlarge a building which the persistence of the present rate of growth will render absolutely inadequate within five years. In some way the accommodations must be enlarged or the number of students diminished. The latter alternative may be brought about by raising the requirements for admission or by extending the course to five years. It would seem a parody on the progress of human institutions should we begin the twentieth century with a school having a five years' course and requiring an A.B. degree after three years of study from its matriculants, that being identical with the conditions in the medical school of Galionum in the thirteenth century, which was the medical department of the University of Naples, the first university which the world has known. Yet this dream does not seem unlikely of accomplishment. Has not the Law School of this university recently required an A.B. degree as prerequisite for admission? The Universities of Oxford and Dublin require that candidates for medical degrees should have already taken an academical degree in arts. In England the General Medical Council decreed that after June 5, 1892, the medical course should last five years. Even Australia, in its four universities, which have medical schools, requires a five years' course for its lowest medical degree, which is the combined degree of Bachelor of Medicine and Bachelor of Surgery. For its two higher medical degrees — Doctor of Medicine and Master of Surgery — further study and examinations are required. The fame of a school is spread more by the excellence of its teaching, the difficulty of enjoying its advantages, and the superior attainments of its graduates, than by the number of the latter.

The extension of the medical course to four years has been taken up with surprising unanimity in all parts of the country. The subjoined list gives the names of some of the institutions which have already adopted the reform. It could probably be extended somewhat, if the annual reports of all the medical schools of the country were accessible.

Medical Schools which have Adopted an Obligatory Course of Four Years, with Date of Adoption.

Michigan.— University of Michigan, Ann Arbor (1890).
Massachusetts.— Harvard University, Boston (1892).
Pennsylvania. — University of Pennsylvania, Philadelphia (1892). Jefferson Medical College, Philadelphia.
Maryland.— Johns Hopkins University, Baltimore (1893). Baltimore Medical College, Baltimore (1895). Woman's Medical College of Baltimore.
District of Columbia. – Howard University, Washington (1893). Columbian University, Washington. Georgetown University, Georgetown.
New York. – Woman's Medical College of the New York Infirmary (1893). College of Physicians and Surgeons (Columbia College), New York.
Illinois.— College of Physicians and Surgeons, Chicago. Northwestern University, Chicago.
Iowa. – College of Physicians and Surgeons, Keokuk (1895).
Ohio.— Toledo Medical College, Toledo (1895).
Minnesota.— University of Minnesota (1895).
Kentucky. – Louisville National Medical College, Louisville (1895).
California.— California Medical College, San Francisco (1895). Cooper Medical College, San Francisco (1894).

It is noteworthy that a large proportion of these schools are affiliated with universities, which fact should stimulate us to renewed efforts to render closer our tie to our university. As a chief measure to this end, the Medical Faculty and this Association of its alumni, acting in harmony with the alumni of the Law and Scientific Departments, have repeatedly petitioned the overseers to be allowed to participate with the alumni of the college in the election of overseers. The corporation is known to favor the change. Committees of the Board of Overseers, in 1891 and again in 1892, reported favorably; but both reports were met by an adverse vote in the board — on the first occasion, of 15 to 9 votes, and on the second, of 11 to 8 votes. The change of a very few votes will give us the coveted majority.

The continued diminution in the number of men with degrees in arts, letters or science, in the entering classes of the school has been slightly reversed this year, as may be seen by the following table:

Year.	Per cent. of Matriculants.
1884	53.9
1885	53.3
1886	46.8
1887	45.
1888	38.8
1889	34.4
1890	38.
1891	36.8
1892	28.2
1893	27.
1894	33.

The table still makes evident that the governing boards of the university have not considered the reciprocal needs of the college and the professional schools. The former is losing students; the latter are being forced to accept students less well prepared to pursue their strictly professional studies.

The following changes have been made in reorganizing the departments, to provide for the fourth year of instruction:

Early in the year, Dr. W. H. Baker resigned his position as Professor of Gynecology. That department was then reorganized and placed under the direction of the Professor of Obstetrics. Dr. F. H. Davenport was promoted to be Assistant Professor of Gynecology; Dr. George Haven was appointed Instructor in Gynecology; and Dr. Edward Reynolds, Assistant in Gynecology; Dr. J. B. Swift retains his former position of Assistant in Gynecology. Dr. C. M. Green, Assistant Professor of Obstetrics, will continue to give clinical instruction in Gynecology in the City Hospital.

Dr. Maurice H. Richardson has been transferred from the chair of Assistant Professor of Anatomy to Assistant Professor of Clinical Surgery; while the Demonstrator of Anatomy, Dr. Franklin Dexter, has been promoted to the vacant chair. Dr. Fred. B. Lund and Dr. John B. Blake have been appointed Assistants in Anatomy. The position of Assistant in Histology has been abolished; and Dr. A. Schäfer, of Zurich, Switzerland, has been appointed Demonstrator of Histology.

The following new appointments have been made: Dr. G. H. Monks, Instructor in Clinical Surgery; Dr. J. C. Munro and Dr. E. W. Dwight, Assistants in Clinical Surgery; Dr. C. L. Scudder, Dr. W. M. Conant, Dr. C. A. Porter and Dr. S. J. Mixter, Assistants in Operative Surgery; Dr. Henry Jackson, Additional Assistant in Clinical Medicine; Dr. Morton Prince, Special Clinical Instructor in Diseases of the Nervous System; Dr. E. A. Crocker, Assistant in Otology; Dr. Abner Post, Instructor in Syphilis. Dr. A. P. Chadbourne having declined reappointment as Instructor in Pharmacology, Dr. Franz Pfaff was appointed to fill the vacancy.

With this abundance of teachers — nearly a hundred — it would seem that every branch of medicine might be adequately taught; yet the existence in this city of the "Boston-Polyclinic," a combination of young men having clinical facilities for instruction to offer to students who are willing to pay their fees for special instruction outside the school, shows that the school does not command all the material for clinical instruction that is available. It is undoubtedly true that in many departments the school does not feel the need of this instruction; but the mere fact that these men find it worth their while to band themselves together to advertise their courses, shows that there is a public by which their instruction is valued and sought after.

The question naturally suggests itself, in view of these facts, Does the school meet all the demands of this community for instruction to undergraduates and graduates? In many branches of medicine this may probably be answered in the affirmative, but in some, such as gynecology and, to a lesser degree, laryngology, genito-urinary diseases, and others, the small number of students to whom clinical instruction can be profitably given at one time would suggest that all available material should be secured for the school.

In view of this large number of instructors the further question arises whether any systematic scheme is adopted by one and all of them in their methods of instruction. It is noticeable that in many departments there is no one head; there are several professors with co-equal powers, but independent jurisdiction over their subordinates. If this condition gave rise to the healthy rivalry such as exists between the intra- and extra-mural schools of Edinburgh, its advantages might offset its disadvantages; but this is not the case. Does the Faculty, as a body, exercise any adequate supervision over the proper co-ordination of its multifarious departments? The methods by which instruction may most profitably be imparted in all branches of medicine are under constant discussion in these days, and new instructors may naturally take up their work without a full appreciation of the most approved modern methods. In the scientific departments, such as chemistry, anatomy and physiology, teaching is the chief concern of the lives of the professors and instructors; and they may be expected to consider carefully the means by which their knowledge may be best imparted to their students. But in the clinical branches the positions are held chiefly as a means to the extension of the holder's practice, and their incentive to excel in teaching is necessarily less. These men must be coached in order that the full measure of their capabilities as instructors may be elicited. It is notorious that some of the professors in the schools have in the past habitually discoursed to their classes upon the last rare case that they have seen in their private practice. This is a matter of great interest to the professor, but is not of most utility to the average student. Does it not seem as though meetings of the instructing body should be held from time to time during the year, at which the teachers should discuss these and kindred topics?

For the Committee,
JAMES R. CHADWICK.

THE PRESIDENT: For reasons which it is not necessary to specify I asked Dr. (librarian) Brigham to give me bibliographical lists of the contributions to medical literature of some of our guests. In due course Dr. Brigham forwarded the lists with the accompanying note: "Though I remained up till a late hour last night I could not finish. Dr. Dock is very reasonable, but Professor Park has it bad, — to the extent of fourteen pages." I hope Dr. Park will continue to have "it bad," for the worse he has it the better it will be for you.

Dr. Roswell Park, Professor of Surgery in the University of Buffalo, Surgeon to the Buffalo General Hospital, Consulting Surgeon to the Fitch Hospital. Buffalo keeps what Chicago failed to get.

SPEECH OF DR. ROSWELL PARK.

MR. PRESIDENT AND GENTLEMEN OF THIS ASSOCIATION: — I do not think I ever in my life more heartily yearned for the gift of eloquence, or the grace of oratory, than at this moment in order that I might do justice to such an occasion. I assure you it is a very great pleasure indeed to meet with you here to-day, and I am looking forward also with most pleasant anticipation to witnessing the commencement exercises to-morrow — for one reason, because I want to contrast them with some others which I recently attended on the other side of the frontier.

A few weeks ago I attended a convention in one of the Canadian universities; and although I sat within ten feet of the chancellor on the stage, I was unable to hear anything that he said. They had that good old English custom of making a noise, and the students at the other end of the hall made such a commotion that it was impossible to hear anything that was said on the stage. Of course, you are aware of the Oxford and Cambridge customs, and it seems that they are still imitated on this side of the water. They also had a dinner afterwards, and I was asked to say something. In fact, our Canadian friends have a habit of calling to his feet every man who is still able to get there after a dinner. And I took occasion to allude, as gently and pleasantly as I could, to the commotion which I had witnessed and the scenes that had come under my observation; and I thought I would try them with a little anecdote about a friend of mine, as I put it, who was making a Fourth of July speech in this country.

During the progress of it he was annoyed a great many times by a man who persisted in asking him questions or making remarks, and the gentlemen finally called him down something after this fashion: He stopped abruptly in the midst of his speech, and said, "My friend, I want to speak to you. Are you a Christian?" — "Yes, sir." — "And you go to church regularly?" — "I do." Said he, "My friend, do you believe in the efficacy of prayer?" — "I do; I say my prayers every night." — "Good. Do you believe in the doctrine of regeneration?" — "I do; I believe in it literally." He said, "Better yet. Now, my friend, I want to give you a piece of advice; when you go home to-night and retire to the privacy of your bedroom, get down on your knees and pray very earnestly and faithfully, pray as you never prayed before that you may be born again, and still-born." Now, they saw it, if they were English.

Dr. Shattuck has extended to me a very cordial invitation to speak to you on the very newest and latest fad, that is, medical education. And he told me that, at least, it would have the beauty of novelty. Now, you understand the difficulties of that topic, gentlemen. I do not know what your needs are. I understand one of my colleagues says the crying need of St. Louis is more colleges. They only have fourteen now.

But, if one may be retrospective for a few moments, and serious now, when I look over the history of the past and try to find for my own benefit what has so hindered the progress of medical education in time past, and that which being removed has permitted the rapid strides of the last few decades, I find that after all it was the malign influence of the church. It is rather an unpleasant thing to have to say, but it is literally true, that the greatest enemy of medical progress in all past time has been the church and its authority. In fact, as one writer in the *Forum*, I believe, put it not long ago, "the authority in the past has been the Juggernaut under whose wheels have been crushed the boldest and best spirits of the past."

Now, probably in no branches of medical study has that authority been wielded more obstinately than in the study of anatomy and surgery. The practical study of anatomy was forbidden virtually during the Middle Ages because the church thought that it was impious to mutilate a form which was made in the divine image. That pious objection, however, does not seem to have kept them from so far mutilating it before death as to tear it to pieces with rack and wheel and with other clerical instruments of that kind.

Dissection was considered unworthy and entirely beneath the dignity of any gentleman in those Middle Ages; and if one were so far guilty of lowering his dignity as that, he was made to suffer for it in many ways. It is a matter of history, you know, that during the fifteenth and sixteenth centuries, although public lectures on anatomy were held, the professor himself did not do the dissecting; he hired some barber to do it, and himself simply expounded what the barber exposed, and that also accounts for the fact that the razor was the first anatomical scalpel, and was preserved for that use for a great many years. Papal indulgence was also necessary during those earlier days before one could dissect anybody, and even then, when the indulgence of the Pope was secured, it was not customary to open the cranium because it was held to be contrary to public opinion. Religious ceremonies were held; and I think one of the most interesting events of the Middle Ages must have been some such ceremony as this, which one can read about in the history of medicine, as, for instance, at one of the Italian universities when a body was publicly to be dissected, it was brought to the neighborhood of the university building in a box by the executioner — of course, it being the body of a malefactor. Under cover of that box it was formally brought into the anatomical hall. Now that body was disreputable, and he was disreputable who touched it until it had been made reputable, and that was done partly by stamping the seal of the university upon the breast of the corpse. If it happened to be a decapitated corpse, the head was placed between the legs and the solemn ceremony went on as before. After the corpse had been made reputable, and the dignity of him who was to touch it was thus preserved, and after the conclusion of the more solemn ceremonies in the anatomical hall, then there were public entertainments, which were given by strolling actors and itinerant musicians, and ceremonies of public festival which lasted the balance of the day. Imagine something of that kind going on at Harvard University to-day!

It is a curious thing that the first anatomical theatre ever erected was erected at Aquapend, in Padua, by Fabrizio, in the year 1549; he built it at his own expense, but he built it so high and so dark that it was necessary to use torches in order that they might see the dissections. That was the father of anatomical theatres of to-day.

In this connection also it is, to me at least, very interesting to note a certain event that occurred in Egypt about thirty years ago. Of course, you know better than I how the ancient school of Alexandria stood, how it was dignified in those old days by the anatomical teachings of Herophilus, Erasistratus, and others almost equally well known, and how with the decadence of that school there was practically no teaching of anatomy in Egypt for 1,700 years. Post-mortems were made by individuals, but no public teaching of anatomy. And one may read, that about thirty years ago, I think, or in that neighborhood, in the new school there, Clot Bey (who I take to be a Frenchman, in Egypt) was giving a public lecture on anatomy in the little theatre school; and — to show how again, under the church, the religious prejudice has always interfered — he was talking to Mohammedan students naturally, and one of the Mohammedans jumped down from his seat on the upper ranges, as Clot Bey was developing the thorax, and drawing a poniard he stabbed him in the side. Clot Bey seemed to be singularly cool because he noticed he was not seriously hurt; and, as the story goes, he opened the case which he had with him, took out a piece of plaster, applied it to his side, and went on as if nothing had happened: "Gentlemen, we were speaking of the disposition of the ribs. I have now a splendid opportunity of showing you that a blow struck from above will not penetrate the thorax," and went on with his lecture.

Surgery has had to share the fate of anatomy in having been considered disreputable until comparatively recent times; and in fact, so markedly was this the case in Germany that it required the imperial edict of Charles the Fifth, in 1558, to make the practice of surgery reputable; and so strong was the prejudice against it and those who practised it, that Rudolph the Second, about thirty years later, had to renew the edict; and that is about the first legitimate surgery that the history of surgery records. And even at that time, the barber — or the barber's surgeon, more properly — who dressed the wounds of the victim who had been removed from the tortures of the Inquisition was thereby himself disgraced.

History also relates at about this time, or, more accurately, in the year 1650, there was a celebrated dispute about the position of the heart. It appears that the Margrave of Baden had been very sick, and his house physician wanted to apply a blister, and he wished to place it directly over the centre of the thorax. Some of the consultants claimed that the heart was not situated in the centre of the thorax but on the side. To settle the dispute a hog was brought in and opened, and the heart was found on the left side. Then the margrave dismissed his house physician for his ignorance in thinking that a margrave's heart was differently located from any other hog's.

It is interesting also to note that there was not a complete human skeleton in all Europe until the year 1658, and that skeleton was set up in Vienna. It is stated, I believe, that Galen advised his pupils to go to Egypt and see a skeleton, but that is the first record of a complete skeleton in Europe at that time.

But time presses, and I would like to speak for a moment of the student life of the Middle Ages, it was so different from anything that we know now; and yet some of the student customs of to-day, like the student corps of the German universities, etc., are really the relics and habits of the customs of those days.

In the sixteenth century the students of the Italian university used to choose not only the rector and officers, but they decided the curriculum of instruction. In fact, in those days the students had everything their own way absolutely. These were the days of travelling scholars, when men attended a term, perhaps, at one university, and then passed to another; and one of the most shocking pictures, most disreputable pictures, of the Middle Ages, to my mind, is the atrocities and barbarities which those travelling scholars used to perpetrate — not only in the universities, but it is said they would get drunk and go into the pulpits of the churches and turn out the priests and preach to the congregation, as many as would stay, or keep them from leaving; and they were guilty of murder and wanton atrocities of all kinds Perhaps one sees a little survival of that sort of thing in the stories one may read to-day.

These were the days, too, when professors were not highly paid. I have read that Melancthon, one of the greatest teachers of his time, during the first eight years of his professorship was paid at the rate of forty-three dollars a year.

That surgery remained so long in the hands of the lower classes, the barbers, and their equivalents, was again mainly due to the injunctions of the church.

You know, too, at this time that the monks, or the religious classes, were about the only ones who had any education; and this is true of medical as well as any other education. They were about the only ones who could read and write; they monopolized the knowledge; and at the same time they were taught by the church that to shed blood was not within their pale, consequently anything which required the shedding of blood, like surgical operations, etc., was left to other classes. There, again, the church has been the greatest enemy in times past of the surgeon and his craft.

I think nothing gave such an impetus to surgery as when some of the French surgeons began to purchase indulgences of the Pope that they might dissect and shed blood — in other words, that they might operate; and this was in the days of the celebrated old College of St. Côme, when the barbers were allied with the Faculty of Paris, and St. Côme was at war with it. And the best thing that ever happened, in all probability, in the history of surgery, was the alliances, or the consolidation, of those two classes, or parties — the university faculty and the old college itself.

These, too, were the days, by the way, when every stitch was charged for separately, and it was an object for the surgeon to put in as many stitches as he could. This was in accordance with the old German maxim, *Viel Hafft (Nähte) viel Geld.*

But I must pass on. I do not know of anything else which shows the evil influence of the church so well as the care of the insane. Within the past week one has read of barbarities indulged in at one of the German asylums, or monasteries, where the insane are cared for. It is nothing to what occurred less than two-hundred years ago under the authority of the church; it is nothing to the way the insane were drowned, or submerged until they were almost drowned; it is nothing to that historic spot on the coast of France at Biarritz, known as the Côte des Fous — the Fool's Coast, or Shore — where the insane were brought down and held under water until they were almost drowned. That was a regular practice.

But let us turn from the past, gentlemen, to the present; and let me detain you but a moment longer now with some remarks about the local situation. Years ago I used to wonder how it happened that none of our text-books emanated from Boston. If you look over the college catalogues of this country and ask yourselves whose books are most studied, you do not find many Boston names. Now, why is that? It is a question I have never been able to solve for myself. Not because you have not as good colleges here, or as good practitioners as elsewhere. I pledge you my word, gentlemen, this is not idle compliment. I think to-day that the best surgery done in this country is done in Boston; and I think that will hold good about the other branches, though I do not know so much about them. I think the most scientific surgery done in America to-day is done right in this city. And the objection will not much longer hold good with regard to text-books.

There have emanated from some of the teachers of this school of late certain books in my own line, as well as in others; but you will pardon me if I talk more about those which I know most about. There, for instance, is the volume of lectures by Dr. Cheever, which is full of his ripe, wonderfully ripe, experience. There is the work of Dr. Warren, which I think is the most creditable book on surgical pathology, and the most beautiful medical illustration of the book-maker's art that has ever been issued from the American press. There are the contributions of Dr. Watson, of Dr. Bradford, and Dr. Lovett, which are superb in their way; and it will not be much longer that one can say, Who studies a book which came from Boston?

We have regulated the requirements for admission to the study of medicine quite differently in New York from the way you do it here. We have in New York an organization which is known as the University of New York. Perhaps many of you have not heard of it. It is not a teaching body; it does not concern itself by giving degrees; but it is constituted by the Legislature of New York as the supervising educational institution of that State, and everything else is tributary to it. Now, that was presided over for a number of years by George William Curtis, which will be a guarantee of its excellence and its position. The University of New York absolutely regulates matters in every way, and it has taken hold of this question of the study of medicine, and now the medical colleges of New York no longer bother about preliminary requirements. The State has relieved us of all that necessity, and no student can begin to study now until he has a certificate of qualification which comes from the regents of that school.

The University of the State of New York manages the University Extension for us, which is the State Museum, in which, for instance, are contained those magnificent treasures gathered by Hall, and by his colleagues, illustrating the history of the State. It manages travelling libraries for us, and does a great deal for us; and, among other things — well, I will shorten what I wanted to say — simply let me close this paragraph, please, with the statement that everything is in its control.

You have heard of the Chatauqua in the State of New York. It has provoked in many minds ridicule; it has provoked a smile on many a face; and yet the Chatauqua idea, so-called, is simply to stimulate study at home on the part of those who cannot carry it out elsewhere. Now, the University of Buffalo has recently introduced the Chatauqua idea into the study of medicine, and I am going to close by simply telling you how we do that. We know it is impossible for some young practioner in the country to go to Buffalo, or New York, or anywhere else, to carry out a course of post-graduate study. We know the human tendency; if he does not go somewhere to study, he will not do it. Now, we are trying to carry out this Chatauqua idea into medical study, and we say to such and such a young man, "If you will take such and such a text-book, or series of books, and study it at home, for three years — if you want to make it so — and fit yourself to pass an examination in that line of work, we will give you a certificate." That certificate means nothing more than that he has studied, and has passed such an examination. It is an incentive, we think, to home study; and that is the medical extension course, as we have called it, and I am looking with not a little curiosity in the future to see how it will work. It is in no sense a substitute for anything else, but simply an incentive for home study.

Gentlemen, I have detained you longer than I intended to; but I thank you for your kindly attention, and for the opportunity of being allowed to address you in this way.

The President: Two years ago, during the Columbian Exposition, the French Government sent to this country a doctor of medicine to report, among other things, upon our medical schools and hospitals. In the report subsequently published by the French Government, Ann Arbor is spoken of as having the most interesting, and, in many respects, the most successful university in the country, not excepting Harvard. I present to you Dr. George Dock, Professor of Theory and Practice and of Clinical Medicine in the University of Michigan, Visiting Physician to the University Hospital.

Among the earliest of Dr. Dock's "reasonable" number of contributions to medical literature was one on "Vegetable Hairs in the Liver." If any of you are now feeling sick, he will probably attribute it to a foreign body in the liver and not to a foreign Frenchman.

SPEECH OF DR. GEORGE DOCK.

Mr. President and Gentlemen: — I am sure nobody here can have any vegetable hairs in the stomach after a dinner of this kind. In accepting your President's kind invitation to appear here, I thought I could get out, on the ground that he had gone round the world in his promised tour last year, and had failed everywhere else and finally turned up in Ann Arbor. I thought that any shortcomings that I might make in my own remarks I could put off on his shoulders.

In selecting a topic to speak on before you, I concluded it would probably be best to tell you something about the methods of education which we pursue in Ann Arbor, methods which we have had to work out very largely for ourselves in the face of considerable inertia on the part of the governing body. As you all know, no doubt, the University of Michigan is supported by the State, that is, it is supported by a tax which varies from time to time, according to the good will of the legislature. To show the sort of men we get that tax from I need only mention one instance. Two years ago we asked the legislature to appropriate from the State taxation the twentieth of a mill. One old Populist got up and said he thought a twentieth would be too much but he was willing to compromise on a tenth.

We have in Ann Arbor three things that are uncommon in medical schools, although two of them sometimes occur together. We have nominally a homeopathic school; we have co-education; and we have the four years' course. Of the homeopathic school I can say but little, as that body is almost defunct now; it is only kept alive by injections of elixir of life furnished by the same legislature.

In regard to co-education, it may be worth while saying a word, especially as the subject was brought home to you last year by Dr. Osler. Now, that matter is becoming so important all over the country that stronger pressure may be brought on you than was some years ago, and you may have to consider the question again, and I can put rather a better aspect on the matter than did Dr. Osler last year. You remember he told you that co-education was a failure, inasmuch as thirty-three and a third per cent. of the women students got married the first year. Now, there are certain reasons for that; it need not always occur; and the principal reason is that the students will only marry professors. Of course, when the fancy of a professor of anatomy turns to thoughts of love no first-year medical woman student can resist, so all you have to do, if you ever introduce co-education here, is to marry off your professors before that comes. The Frenchman Dr. Shattuck told you about said of our women that they looked a good deal like Russian Nihilists. Now, I must say, some of them go rather to extremes in their dress, but on the whole they are not so bad.

The introduction of co-education in a medical school seems to me to cause a very radical change in the manners and customs of the men students; at least, at Ann Arbor I have never seen the disorderly conduct that is only too prevalent in other schools. I think we can safely say that that is due to the presence of the women; and this gives an air of seriousness and attention to all the classes and all the laboratories that is rather unusual.

In regard to the four years' course, as you have just been told, we graduated last year the first four years' class in medicine, that is, the first class that had studied four full years in a medical school. The year before we graduated the transition class, going in with advanced graduates or as the result of being trained the year before. The practical result of that change I may say has been highly satisfactory. The change took place after raising the standard of entrance examination, and after raising the fees quite materially. We have nominal fees, very moderate in regard to the entrance fees, yet, on the whole, we have laboratory fees which bring up the total expenses of each student in the four years to rather more than $500, so that the idea which is prevalent that the school is a free school, as far as finances are concerned, is not altogether correct. The number of students has increased ever since the four years' course was announced, so that last year, the year just passed, we had more students than the school ever had in the flush days just after the war, when every hospital steward was studying for a medical degree.

The results that we have here, I think, ought to answer a certain claim that has been made in many parts of the country, that it is necessary to graduate cheap doctors on account of certain parts of the country. Now, we send out these four years' students to parts of the country that are by no means opulent, parts of the country where the natives only say that the land is as poor as an amateur concert, and the total population in each county is not more than one, counting skunks. It can easily be seen by consulting directories that the cheap students are the ones who seek the cities, that is, seek the places which are ordinarily supposed to be the most lucrative for practice.

In regard to the course of medicine, we think we had some unusual conditions in the beginning that made the four years' course comparatively easy. In the first place, we had long ago two full years of scientific work, or laboratory work in the scientific branches. That was a thing that some schools in the East had not, and it is a thing which keeps many schools in different parts of the country from taking up the four years' course. Then we did not have another thing that many of the schools in the East have, and which is not so easy for them to have the fourth year; we did not have a voluntary fourth-year course. Of course, we had always a few post-graduate students, but we never had any formal course offered; so we have been able to avoid adopting a fourth year, as has been adopted at least in one school in this country, in which the fourth year consists in a series of short courses which correspond with the courses in post-graduate schools.

We have spread our whole system of instruction over the four years, and it is arranged without much forethought in that way after the manner and custom in the German schools. We have given up to the scientific branches much that is classed in America with the *dictum physicum*, and the next three years are taken up with clinical work. We are trying to put pathology in the second year, much as you have here, — I think it belongs there; but our early courses are so full that we have not been able to accomplish that. In the course of these four years we give a very large number of hours; I do not know exactly the number of hours that we give, but I know our students spend about twice as much time as the students working for other degrees. In the clinical class I do know they work nearly every day from eight in the morning till six at night; and in the hospital they work after six, they work about an hour in the evening. Our clinical work has a great many advantages, on account of the way in which we get our patients. Although it might be supposed, on account of the size of the town, clinical material might be scarce, as a matter of fact, we get most of our cases from outside. The hospital has long been known; it was one of the earliest in that part of the country, and has up to the present time enjoyed a wide reputation among people in the adjoining States. All the people who come there pay. If they cannot pay themselves, their counties pay for them, in Michigan. From other States they have, of course, to pay their own expenses. They pay, however, a sum which is not sufficient to pay for the expenses of keeping. They pay five dollars a week in a ward, and more in private rooms. All these patients who are in the ward or private rooms come there with the distinct idea that they are to be used as clinical material, and we use that up to the very last understanding of it. Coming, as they do, in that way, and being intelligent patients for the most part, we never have any difficulty in making them do whatever we please; and that amounts to not only taking them into the clinics and operating upon them, demonstrating them in the public clinics, but we also use them to an extent which can hardly be done, I imagine, with the ordinary city-hospital material. If I have a patient, for example, for physical science, he not only comes into the clinic after he has been worked at by a last year's student, but he is also used by a second year's student with practice in auscultation, and also by junior students for two or three hours a day. Of course, they are not all used so much; but a good many of them are, and a good case is practically being worked on all day long. When I first began that in my own department, I, of course, worked them more than they in their other clinics, because I have more room to work in. I was told by my colleagues and by the lay superintendent that it would ruin the service, but, on the contrary, we have had better service than heretofore. I think the patients themselves take an interest in this matter. It not only breaks the monotony of their existence in the hospital, which is well known in other hospitals; but the patients see, and see very plainly, that they are not only objects of interest, but that they are being examined very much more thoroughly than they have ever been before. This idea of theirs, of course, we are careful not to abuse at all. So that in that way we have an amount of material which is quite out of proportion to the size of the town in which we live. We have usually between sixteen and seventeen hundred patients in the hospital; and these, as I say, are used as long as they are available. After a patient does what he can for the development of the young idea, unless there is a great deal of room in the hospital, he goes home; and we have an understanding with the country practitioners, which, of course, is rather useful to them, but we refer them back to their family physicians, which is often to their own advantage. Many patients are, in fact, sent down by physicians in the country after they have worked on them as long as they can; and they are nearly always glad to have them come back at least reinforced in their faith, if not cured.

This idea of having complete control over the clinical material raises the question why the same thing cannot be carried out in regard to autopsies. We cannot do it ourselves because some of our authorities are opposed to it, they think it would cause too much opposition among the public; but it seems to me — in fact, I am certain — that if any hospital, or any hospital influence, made an announcement — not, of course, too open — but an announcement in the reports, or in the circulars that are sent out, that the bodies of all patients dying there were to undergo autopsy, that this would not only create no opposition, but it would add very much to the increase in post-mortem operations.

In regard to our methods of work, we have nothing that is distinctly different from that carried out in other places. We, in all departments, give didactic lectures, although we are developing the recitation system to a considerable degree. We have recitations in all branches, in which the students are assigned topics from text-books and they are very often required to look up works of reference to meet the requirements of the recitation. This recitation is carried on for the most part by young instructors, men who have had little experience, and who are paid by the institution. Unfortunately we are not allowed —

it is against the rules of the institution — to have instructors giving private courses; but, personally, I am very anxious to have courses offered for other men, who would come in competition with these instructors. We have been most fortunate in getting faithful assistants; but, it seems to me, it would be a very useful thing to introduce, what is, of course, much more common in large cities, a little competition among the instructors.

In our recitations we take account of the students present. We do not count them where they have any assigned seats at the lectures, but our quiz-masters, as we call them, take account of absence. That is the only way they are allowed to mark them. We do not allow them to give marks as was formerly practised in the elementary schools. The students got too much the idea that the quiz was a grind, and failed to get the best advantage out of it.

Our examination system is somewhat peculiar, and we think it works very well. We have two examinations each year of every class. In the middle of the year we have an examination; the whole week is given up to it, nothing is done in this week except the examination, and in that examination we pluck most of our poor men. We find it much better to throw them out in the middle of the year before they have gone so far. And the result is we have to pluck fewer men at the end of their course. And that prevents much of the dissatisfaction that students often have when they have been allowed to go three or four years without any check, and then find themselves pulled up.

Now, these are the principal points in the methods that are used at Ann Arbor; and, as you can easily imagine, we are by no means of the idea that this condition is to be looked on as final. In fact, we are constantly trying to make improvements in the course, and from year to year do make certain changes. Even in the last year we made the very important change of stopping all repetition. It happened before that students had the opportunity of hearing lectures twice on the same subject, and, of course, they postponed that until the last possible year. Now, we have stopped that, so that a student has an opportunity of hearing a course only once. We have condensed the courses. We have materia medica, say, theoretically, which we have taught from the theoretical standpoint altogether. We have that taught five times a week in the junior year, and in practice the didactic lectures are given only in the junior year three times a week. That we find a very great advantage.

The students learn a great deal more in a condensed course than they did formerly when we spread it over twice the time.

In regard to the future, our idea is that the greatest progress must come from the other colleges and not from the medical schools; and this is also my opinion. I believe that although much must be done yet in improving medical education, the next thing to do is to improve the condition of the students before beginning medical studies. Of course, here, as at the Hopkins, you are far ahead of all other schools that I know of. Our own entrance examination, for example, is no higher than the entrance examination of the literary department. We have not been able to raise it any higher. The reasons why we cannot go much faster have been explained by President Eliot, and I was very glad to have them explained in that way. He gave the ideas that I have been preaching at home in regard to the needs of education preceding medicine; and I think myself that it will be easier than some people think to have classical and scientific teachers condensing the work, giving the A.B. or the B.S. after three years, than they believe now. I was told at home by one of our leading teachers only on Saturday night, when I spoke about the matter, that he thought that would come very soon; and it will come very much sooner if professional schools make known the importance of it.

Of course, it is entirely out of the question, as President Eliot said, for men to study until they are twenty-six or twenty-seven years old for the degree of medicine; it not only takes up too much time but I think by the time a man spends as much time as that studying he very often becomes, as the athletes say, stale; he is unable to do as good work as if he had an independent start two years earlier. So I think by laying stress on the importance of better secondary education which, of course, must come very slowly, and on the theory of giving the degrees in arts and science at an earlier period, in a very few years the medical schools will be able to take a more decided step in advance than they ever did before. I think it will be more gain than to change from two years to three, or from three years to four, because the men will certainly have advantages in the way of preliminary study which we cannot expect now. And that, as I say, will come much sooner if you will follow the President's advice and urge that change. And I see no reason why you should not. And in that respect I am reminded of an experience I had on my way here. Coming on, we stopped as usual five minutes at Niagara Falls, and got out and looked at the Falls; and, of course, the usual exclamations were made about the grandeur and the wonder of the Falls, and so on, when suddenly in rather a high-pitched voice was heard, "Why shouldn't it? What is to hinder it?" So that it seems to me there is nothing at all to hinder Harvard College from carrying into effect in the near future all the impovements which your President has spoken of to-day.

I thank you very much for your kindness and for your attention in hearing my remarks.

(To be continued.)

Recent Literature.

A Manual of Modern Surgery, General and Operative. By John C. DaCosta, M.D., Demonstrator of Surgery, Jefferson Medical College; Chief Assistant Surgeon, Jefferson Medical College Hospital; etc. Illustrated, 809 pages. Philadelphia: W. B. Saunders. 1894.

This work is attractively written, and will be a popular one, especially with the medical student. It is clear, well illustrated and well published. It is attractive because it is free from data and hypotheses which cause doubt in the mind of the reader as to the correctness of methods, theories or treatment. One feels as if the subject of surgery, at least, was thoroughly understood, and that the methods described in these pages were established facts. This impression is produced by omitting all which has become obsolete or valueless, all unessential theories, and presenting to the reader only what is in common use.

If the book is used as an elementary treatise or manual, as its title implies, it will well serve this purpose. Its owner will not be confused by conflicting ideas, and he will acquire easily a fair knowledge of surgery. The subject is surprisingly well covered when one considers the size of the volume. If the student remembers that the subject is not exhausted when he has mastered the contents of this work, he will find it of great assistance to him.

For the general practitioner it is a general index of the subject. The essentials of clinical history, diagnosis and treatment are satisfactorily, but often quite briefly given and without much detail. He must often supplement or verify what he reads here by additional information before he can adapt it to his clinical work. The expert surgeon will find it an attractive summary, but one in which he finds many omissions, also many paragraphs where his opinion and belief is at variance with the writer's.

Manual of Chemistry. By W. Simon, Ph.D., M.D., Professor of Chemistry in the College of Physicians and Surgeons of Baltimore, etc. Fifth edition. Philadelphia: Lea Brothers & Co. 1895.

We do not like these text-books of "Medical Chemistry," so-called. They include theoretical and descriptive chemistry, both qualitative and quantitative analysis, physiological and pharmaceutical chemistry. It is impossible to do justice to all these divisions of chemistry in a single volume of moderate size. There are excellent text-books of descriptive, analytical and physiological chemistry; and there seems to be no very good reasons for crowding all these subjects into a single treatise, in which the treatment of each must necessarily be very unsatisfactory. Professor Simon's book is, however, one of the best of the numerous books constructed on this plan. So long as the methods of teaching chemistry, now used in our medical schools, remain in vogue, the book will doubtless be found quite useful if supplemented by a suitable course of lectures and laboratory work.

Practical Uranalysis and Urinary Diagnoses. By Charles W. Purdy, M.D. Philadelphia: The F. A. Davis Co. 1894.

This is, in most respects, the best practical work on the urine that has appeared within recent years. The author first considers the physical characters of the urine, and then takes up each urinary constituent, both normal and abnormal. One hundred pages are devoted to urinary diagnosis, and seventeen pages to the examination of urine for life-insurance.

Unfortunately, the chemistry of the book is not what it should be. The author's knowledge of this science is apparently very inexact. His nomenclature is specially deserving of criticism. For example, his use of the terms "sodium," "potassium," "ammonium" and "caustic sodium," etc., to designate the alkaline hydrates, does not look well in a scientific book. In spite of these and some other faults, the book is one which will be found very useful by those desiring to study this subject practically. We hope, however, that the author will submit his work to a chemist, for revision, before publishing a second edition.

The Chair of Pathology in the Faculty of the Jefferson Medical College in Philadelphia is vacant.

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THE INFECTIOUS MYELITES.

The etiology of the myelites, as of the cerebral meningites, merits (and is in fact receiving) new statement from the standpoint of bacterial pathology. In fact, the latest authorities now regard the myelites, acute or chronic, diffuse or systematized, as for the most part of infectious origin, though all are not yet agreed as to the extent of application of the word myelitis, and the nosology of the myelites is still in a state of confusion, as will be seen on consultation of the latest text-books.

In 1880, Landouzy, in his "Thèse d'Agrégation," enumerated a host of published observations to prove the causal connection between various myelites and certain known infections: post-dysenteric myelites; post-choleric multilocular sclerosis (Joffroy); infantile paralysis following variola and dysentery (Roger and Damaschino); diphtheritic paralysis with medullary lesion (Œrtd); multilocular sclerosis following typhoid fever (Ebstein); following erysipelas (Jolly); diffuse myelitis after pneumonia and small-pox (Westphal); myelitis after diphtheria (Vulpian); myelitis after charbon (Baumgarten); after dysentery (Hoffman); etc. Four years later, Marie insisted on the etiology of multilocular sclerosis, which he considers as "a medullary-encephalic localization of the vascular determination of divers general diseases which seem to be constantly of infectious nature"; and observations have of late multiplied which connect spinal inflammations with various infectious diseases; pneumonia (Bourgnet, Joffroy, Achard); diphtheria (Percy Kidd, Seymour, Sharkey, Bikiles); dysentery (Laveran); measles (Barlow); typhoid fever (Curschmann); acute rheumatism (Chevreau); blennorrhagia (Dufour, Ullmann, Barrie); furunculosis (Lippmann); variola (Auché and Hobbs); streptococcus infection (Homan).

The subject was exhaustively considered by Grasset at the recent Congress of Medicine at Bordeaux (August 14, 1895), and by his co-referee, Vaillard.

According to Grasset, all the infections have the power, whether by their microbes or their toxines, to engender myelitis at divers phases of their course. The infectious myelites have essentially the same clinical history whatever be the nature of the causal infection, myelitis may follow scarlet fever, measles, typhoid fever, etc., and be caused by the specific microbe or its toxine, or the streptococcus, staphylococcus or coli-bacillus infection may find the soil prepared, and inaugurate the inflammatory mischief.

In small-pox, paralyses are not very rare. The onset of the medullary localization is generally late; on the other hand, the spinal affection may appear early, as soon as the initial backache. In the cases followed by autopsy, there was paraplegia with white softening of the gray substance of the lumbar region, disseminated myelitis, dorso-lumbar myelitis and acute ascending paralysis of the Landry type.

The paralyses following measles generally supervene during convalescence. One case of acute ascending paralysis reported by Barlow began the third day and killed on the eleventh.

The paralyses of typhoid fever are more common. They are also late — third or fourth week, during convalescence. Cases, with necroscopic verification, have been noted of multilocular sclerosis, acute ascending spinal paralysis, spinal meningitis, etc.

Four significant cases of blennorrhagic myelitis (with autopsy) have been observed; acute dorsal myelitis, ascending myelitis, medullary abscess with purulent meningitis, staphylococcus meningo-myelitis.

Jolly reports a case of *sclerose en plaques* terminated by bulbar accidents, following erysipelas.

Several cases are on record where the myelitis was a sequel of furunculosis and various affections characterized by the staphylococcus (staphylococcus abscesses of the cord consecutive to cystitis, etc.).

Diphtheria seems much oftener to produce peripheral than medullary lesions; at the same time true diphtheritic myelites are reported, and such have been produced experimentally by injection of the toxine (Enriquez and Hallion, as quoted by Grasset).

Numerous cases have been cited of myelitis following cholera, cholera-infantum, chronic diarrhea, dysentery and coli-bacillary infection.

We find on record two cases of post-grippal myelitis (with autopsy): one by Laveran (paraplegia), and one by Leyden (acute ascending paralysis).

Five cases have been reported of pneumococcus-myelitis, coming on at different periods of the infection.

Lastly, several cases have been observed of myelites occurring during the course of acute rheumatism, and of malarial fever.

Various forms of myelitis have been induced in animals. Roger, Widal, and Besancon, by injections of the streptococcus, have caused anterior poliomyelitis. Gilbert and Lion have produced the same disease with the staphylococcus, and Thoinet and Masselin with the colon bacillus; and the results of experimentation have rendered probable the infectious origin of progressive muscular atrophy and of infantile paralysis consecutive to typhoid fever, measles, rheumatism and pneumonia. With a culture of the streptococcus of moderate virulence, Roger has induced in hares a systematized myelitis manifesting itself by muscular atrophy of the posterior extremities. Sometimes the result of the streptococcus-injection was paraplegia with contracture, but in all the cases (116) muscular atrophy followed. Charrin and Babinsky have obtained spastic paralysis in animals inoculated with the pyocyanic bacillus.

Other experimenters have noted the existence of grave lesions; these concentrate themselves in an almost exclusive manner in the ganglionic cells of the gray axis, and particularly on the anterior cornua, constituting granular degeneration, vacuolization of the protoplasm, vitreous degeneration of the cell which atrophies and loses its prolongations. The white substance is often more or less affected, while the neuroglia is generally intact. The blood-vessels are dilated and the source of little hemorrhagic foci. The living cultures and their toxines are capable of determining these experimental medullary troubles. Introduced by the blood current, the microbes localize themselves in the medullary substance and form colonies; the colon bacillus has been found there by the culture methods in animals that have died from paralysis. And Thoinet and Masselin have found the staphylococcus in similar circumstances. But as most pathogenic microbes act principally by the poisons which they secrete, it is doubtless true that toxines constitute the principal efficient cause of the lesions undergone by the nervous elements; and the direct experimental demonstration of this has been given by Charrin with the soluble products of the pyocyanic bacillus, and by Enriquez and Hallion with the diphtheria toxine.

In numerous instances acute diffuse myelitis, with its symptom syndrome, has followed experimental infection; the various forms of syringomyelia have been observed to follow infectious diseases; and it may be said of multilocular sclerosis that in many instances its microbic origin is not doubtful.

With regard to locomotor ataxia, if its frequent syphilitic origin be conceded, it must be ranked among the infectious diseases of the cord, but there is still much obscurity respecting the etiology of this affection.

Certain infectious agents and their toxines have especially the aptitude to provoke paralysis; in this class may be reckoned the diphtheria bacillus which has a particular affinity for the peripheral nerves, the colon bacillus, the bacillus pyocyanicus, and the virus of rabies.

With the exception of tuberculosis and syphilis, which have a pathology *sui generis*, it cannot yet be said that any constant lesions, by which their agency can with considerable certainty be detected, follow the introduction of any of these infectious agents; in other words, as Grasset expresses it, "the infectious myelites have not a different clinical history according to the nature of the causal infection," and we shall be obliged continually to hypothecate another agency in the production of the myelites, namely, a *neuropathic predisposition, acquired or inherited.*

In bringing to a close this rather long *résumé*, we must refer those who desire a more complete exposition of the subject to the full addresses of Grasset and Vaillard at the Bordeaux Congress.

THE CEREBRAL PATHOLOGY OF ASIATIC CHOLERA.

THE study of the comma-bacillus, preventive inoculation and other considerations connected with this microbic origin of cholera, has of late years absorbed so much attention, that the pathology of the disease has attracted perhaps less attention than its interest would warrant.

The lesions of the central nervous system, the symptoms attributable to which are so marked, especially during the period of reaction, the so-called cholera-typhoid, have heretofore attracted little attention from pathologists.

Of especial interest, therefore, is the preliminary report recently published by Tschistowitsch[1] of his investigations on this subject. In view of the fact that our data with respect to the affections of the central nervous system in Asiatic cholera were few, he undertook the investigation of the subject, in the pathological laboratory of Professor Winogradow. The attempt was made to ascertain the relation between the conditions observed in the cerebrum in cases which died in the algid stage of the disease, and in those who, having survived this stage, died during the period of reaction, with symptoms of severe cerebral trouble. On account of these symptoms this last period of the disease has been called cholera-typhoid. For this purpose, in suitable cases, fresh pieces were cut out from the cortex in the frontal, temporal, paracentral, and occipital lobes, also from the corpus striatum, cerebellum and medulla, and hardened in Müller's fluid. From these pieces sections were cut and stained by the various methods in use in neuropathology for microscopic examination. The most important observations made were the following:

(1) In the "foudroyant" cases (cases dying in the algid stage of the disease within twenty-five to thirty hours of its inception), unmistakable changes were observed in the cerebrum.

(2) In cases which had died during the period of reaction, the same changes were observed, but of a much more advanced type.

(3) In one severe case with well-marked "typhoid" symptoms, cerebral changes were present to a marked degree, between which, and those of the algid stage, no satisfactory parallelism could be established.

(4) The alterations observed chiefly concerned the nerve cells, but were also to be noted in the vessels. The neuroglia showed but slight deviation from the normal, the nerve fibres were but slightly affected.

(5) The appearances in the ganglion cells were of the following character: in the rapidly fatal cases, there were evidences of edema of the cells, which showed itself in increase of the intercellular spaces and the formation of fine vacuoles in the cell bodies. Later, certain of the nuclei lost their chromatin (were not affected by nuclear stains), became irregular in outline, and indistinct, and finally the nuclei entirely disappeared. At the same time the cell substance became cloudy, coarsely granular (albumin and pigment granules), lost its connection with its processes, and became changed either into a mass of granules surrounding the nucleus, or in case the nucleus had undergone the changes described above, the entire cell was transformed into a collection of granules difficult to stain, which occupied only a part of the broad cell space. In other cases, after the loss of the nucleus, the cells became more homogeneous, but not highly refracting. In the intercellular spaces, as well as in the walls and bodies of the nerve cells are found round and oval neuroglia and round cell nuclei, but in small numbers; nowhere is there evidence of an increase in their numbers, or of pressure upon the nerve cells.

(6) The small arteries, veins and capillaries are over-filled with blood; the perivascular lymph-spaces, which are moderately enlarged, contain much extravasated blood, masses of granular pigment and yellow flakes, made up of a massing together of red blood-corpuscles. Pigment granules are also found within the vessels. Small hemorrhages are frequent in the cerebral substance. The number of neuroglia nuclei is in places greater around the vessels than within the cerebral substance itself, but is nowhere greater than the normal. An emigration of the leucocytes was not observed, they were only found present in isolated examples.

(7) The cell substance of the larger neuroglia elements, with recognizable protoplasm, underwent also granular degeneration; but their nuclei, as well as those of the small neuroglia cells, were not visibly altered. An investigation of the number and size of the nuclei of the neuroglia is not yet completed.

(8) With respect to the extent and severity of the affection, the frontal and paracentral convolutions show the most marked changes; the cerebellum and occipital convolutions are the least altered. The remaining portions of the cerebrum take an intermediate position.

(9) From all the alterations described above, it is evident that the cerebral changes in Asiatic cholera, as well in the algid stage as the period of reaction and of typhoid symptoms, are of the nature of an acute degeneration and necrosis, and not of a perivascular inflammation. The establishment of this fact is certainly an important advance in our knowledge of the pathological anatomy of cholera.

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[1] St. Petersburger med. Woch., No. 31, 1895.

MEDICAL NOTES.

Subscriptions to the "Index Medicus."— The following additional subscriptions to the *Index Medicus* were received by Dr. Billings from August 24th to September 6th:

Albany, N. Y.: Dr. Samuel B. Ward.
Brattleboro, Vt.: Dr. Henry D. Holden.
Cleveland, O.: Cleveland Medical Library, Dr. Dudley P. Allen, Dr. Henry K. Cushing.
Edinburgh, Scotland: Mr. Young J. Pentland, Publisher.
Lille, France: Bibliothèque Universitaire.
New York City: New York Academy of Medicine, Dr. Geo. T. Elliot, Dr. Willy Meyer.
Paris, France: Dr. Charles Richet.
Philadelphia, Pa.: Dr. Wm. W. Keen, Dr. J. William White, Library Pennsylvania Hospital, Dr. Wm. B. Van Lennep, Capt. V. Vischer.
St. Paul, Minn.: Dr. C. A. Wheaton.

The Milner-Fothergill Gold Medal.— The Milner-Fothergill gold medal in therapeutics has been awarded by the University of Edinburgh to Dr. Edmund Smith, of York, for his essay on the digestive ferments.

The Sanitary Condition of the French Troops in Madagascar.— According to the French newspaper reports, the sanitary condition of the French troops in Madagascar is only mediocre, a phrase which probably falls far short of expressing their actual condition. Very few of the soldiers have escaped attacks of fever; but according to *Le Progrès Médical* the mortality has been light in proportion to the number of cases.

No Marriage without Vaccination. — The stringency of the vaccination laws is in England the subject of noisy agitation on the part of ignorant demagogues; but what would some persons say to the interference with the rights of the individual which is maintained by the laws of Norway and Sweden? In these countries so impressed is the legislature not only with the advantages but with the public duty of vaccination that before a couple can be legally married certificates must be produced showing that both the bride and bridegroom have been satisfactorily vaccinated? — *British Medical Journal.*

Gonorrheal Rheumatism in the New-Born. — At the Eleventh French Congress of Internal Medicine, Haushalter, of Nancy, reported the case of an infant who during the course of a purulent ophthalmia developed an arthritis of the right knee and left wrist. Gonococci were found in the fluid aspirated from the knee-joint. This is said to be the eleventh reported case of gonorrheal arthritis in the new-born. The disease is generally monoarticular, the knee being most commonly affected. The disease is attended by but slight fever and general disturbance, and recovery is usually complete.

An Epidemic of the Dancing Sickness broke out a few weeks ago among the school-children of Rehlingen, a village in Germany. During a violent thunder-storm that came on one day while the children were all in school, one of them, a girl twelve years of age, was suddenly seized with a general tremor, and soon after, jumping from her seat, began to dance wildly over the floor. Other girls immediately began to imitate her, and before long there were over thirty of the girls, and seven or eight of the boys, all hysterically dancing around the school-rooms. This was kept up for an hour or two, and was repeated the following day at about the same hour. The schools were then closed for three weeks in order to get the children into a normal state. — *Medical Record.*

NEW ENGLAND.

Acute Infectious Diseases in Boston. — During week ending at noon, September 11, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 76, scarlet fever 22, measles 1, typhoid fever 25.

Bequest to the Massachusetts General Hospital.— By the will of the late Mrs. Elizabeth T. Eldredge, of Newton, the Massachusetts General Hospital receives $10,000, to be used in the establishment of free beds.

Bequests to Public Institutions.— By the will of the late Benjamin P. Cheney, $10,000 was given to the Massachusetts General Hospital, and $2,000 each to numerous other institutions, including the Boston Free Hospital for Women, the House of the Good Samaritan, the Massachusetts Charitable Eye and Ear Infirmary, the St. Luke's Home for Convalescents, and the West End Nursery. The Children's Hospital received $2,500.

NEW YORK.

The Medico-Legal Congress. — The sessions of the Medico-Legal Congress were held in the United States Court-Room in the Post Office Building on September 4th, 5th, and 6th. The Hon. Clark Bell was elected President; and among the Vice-Presidents of the Congress were Judges Abram H. Daily, Noah L. Davis, Calvin E. Pratt, and A. L. Palmer, Prof. R. Ogden Doremus, and Drs. Forbes Winslow, W. J. O'Sullivan, T. D. Crouthers, and Paul Gibier. Dr. Forbes Winslow, of London, read two papers, one on "The Progress of Lunacy," and one on "Suicide Considered as a Mental Epidemic." The main causes of the prevalence of suicide he considered to be: the great publicity given by the press in publishing revolting details of crimes and trials, thus reacting perniciously in the minds of weak-minded persons; insufficient power of the legislature in suppressing such publicity; the liability to act epidemically. Clark Bell read a paper on "Hypnotism in the Courts of Law," which was followed by an interesting discussion; and there was also an extended discussion on the "Medical Aspects of Inebriety," which was opened by a paper by Dr. T. D. Crouthers, of Hartford. Among the other papers read were the following: "Necessity of Amendments of the Laws of New York appertaining to Commitments of the Insane," by Albert Balch; "Two

Remarkable Cases of Antimony Poisoning," by Dr. Charles A. Doremus; "What May be the Part of Bacteriology in Forensic Medicine," by Dr. Paul Gibier; "Milk Adulteration," by Prof. R. Ogden Doremus. In the last the lactometer was regarded as an altogether untrustworthy instrument in the detection of adulteration in milk. On the evening of September 6th there was a banquet at the Press Club.

A DEARTH OF VACCINE VIRUS. — It is stated that about four thousand children had to be refused admission to the public schools of Newark, N. J., after the summer vacation, because they were without certificates of vaccination. The demand thus produced for vaccine virus soon exhausted the supply in the city.

A LOWER MORTALITY. — The cooler weather of last week had an appreciable effect in reducing the mortality of the city. The number of deaths reported was 735, against 851 during the preceding week, and 777 for the average of the corresponding weeks for the past five years. The mortality from diarrheal diseases was reduced from 174 to 106.

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Miscellany.

BELLEVUE HOSPITAL.

THE Commissioners of Public Charities and Correction have lately asked the members of the Fourth Division of Bellevue Hospital to form an organization for the purpose of giving instruction to graduates and third-year students. The medical staff of the Fourth Division consists of Drs. C. L. Dana, George B. Fowler and Alex. Lambert. The surgical staff consists of Drs. J. W. S. Gouley, Chas. Phelps and W. F. Fluhrer. The gynecologist is Dr. W. Gill Wylie.

The following communication, from the Commissioners, and the answer thereto, are given for the information of the profession:

DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION.
COMMISSIONERS OFFICE, NEW YORK, Sept. 3, 1895.

GENTLEMEN: I am directed to transmit the following proceedings of the Board, at a meeting held this day:

Resolved, That the seven members of the Fourth Division of Bellevue Hospital be requested to form, without delay, an organization for practical instruction to graduates in medicine and third-year students, in the hospital and the bureau of medical and surgical relief for out-door poor.

Resolved, That the members of the Fourth Division shall be empowered to draw, from the institution subject to the division, all necessary clinical material.

Resolved, That the Commissioners will heartily co-operate with the Fourth Division in carrying out the scheme of instruction.

Resolved, That certificates issued to those who shall have attended instruction, and signed by the seven members of the Fourth Division, shall be countersigned by the Commissioners, and shall bear the seal of Bellevue Hospital. By order,

G. F. BRITTON, *Secretary*.

NEW YORK, Sept. 6, 1895.

To the Commissioners of Public Charities and Correction.

GENTLEMEN: At a meeting of the Fourth Division of Bellevue Hospital, held on the fourth day of September, your communication was presented and read. The members of the Division desire to express their high appreciation of the step you have taken, in the interest of the hospital and of the people at large, in thus adding to the usefulness of the vast amount of clinical material in Bellevue. They have therefore resolved to accept your invitation to become a teaching corps, have formed the organization which you requested, and have further resolved to begin, on or about the first of October, the courses of instruction instituted by your Honorable Board. Each course of instruction shall continue six weeks, and not less than five courses shall be given annually. Very respectfully,

W. F. FLUHRER, M.D., *Secretary*,
479 Fifth Avenue, New York.

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A HOSPITAL BROKEN UP BY A CHINESE MOB.[1]

ON August 6th, the Mission Hospital at Fat-Shan was destroyed by Chinese rioters. The hospital, with other destroyed property, was owned by the English Wesleyan Church. The city where it was located is a large manufacturing centre, fifteen miles west of the city of Canton. It has a population of 500,000, and is frequently spoken of as the "Birmingham" of China. Missionary work in its various forms has been carried on there for about thirty-five years. The London Mission has a flourishing work there, which is sustained by the Chinese church in Hongkong. The English Wesleyan Mission has chapels, school, hospital and residence for several missionary families there, a very prosperous mission. Their hospital, which has developed under the efficient management of Dr. Wenyon and his colleague, Dr. Macdonald, is one of the notable institutions in South China. Not only has the medical and surgical work done been of a very high character, but the hospital has, by judicious management, become practically self-supporting. It has been patronized by many of the wealthier people. Their pecuniary acknowledgments of benefits received, and the fees received by the physicians in charge for service rendered in answer to special calls, have sufficed to cover the current expenses of the hospital. It has demonstrated the fact that even Chinamen can appreciate superior talent, and not only respect it, but desire it the more when they have to pay for it. The high standing of this hospital among the respectable residents of Fat-Shan has not saved it from the mob.

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INTRAVENOUS INJECTIONS OF MERCURIC CHLORIDE.

THE administration of mercuric chloride and iodide by the intestinal canal is often difficult or impossible owing to its irritating qualities, and the pain caused by subcutaneous injections of this agent is often so severe as to militate against its administration in this manner. As against the inunction method of administering mercury we have both its uncleanliness and lack of exactitude in dosage.

Inasmuch as the method of intravenous injection recommended by Baccelli is painless except for the prick of the needle, it has obvious advantages over the method of subcutaneous injection. In order to form some estimate of the practical value of this method, Görl has recently tried it in a series of nine cases of syphilis, choosing those forms of the disease, which experience has shown to be slow in recovering under ordinary conditions. The solution employed consisted of one to three parts of sublimate in 1,000 parts of normal salt solution; the injections were made every second day, beginning with one cubic centimetre of the solution, and increasing to two to five cubic centimetres.

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[1] Journal of the American Medical Association.

The curative effects of the mercury in these nine cases began to appear very early in the course of the treatment, in correspondence with the observations of Baccelli and Blaschko. Two cases, however, showed early recurrence of the symptoms after the treatment was discontinued.

The technique of the operation is simple. After one of the prominent veins is made to stand out by a distally placed tourniquet, a small, very sharp and preferably short needle is thrust obliquely into the vein, care being taken not to penetrate the opposite wall. The mobility of the point of the needle shows that it is within the lumen of the vein. Care should be taken not to move the needle point about so as to wound the intima of the vessel, which would cause danger of thrombosis. If the vein is properly punctured, no pain is felt by the patient when the solution is injected. If there is doubt whether the needle point is within the vein, a little fluid should be injected, and if pain results, the point is not within the vein, and another puncture should be made. The more rapidly the puncture is made the less often will the injection fail. Often, especially when a large needle has been employed, a bluish discoloration along the course of the vein will follow, which is probably due to the escape of a little venous blood through the punctured wall into the subcutaneous tissues.

In summing up his paper, Görl concludes that the advantages of Baccelli's method are:

(1) The painlessness of the injections.

(2) The smallness of the dose and its accurate measurement.

(3) The rapidity of the curative effects.

(4) The freedom from danger (as far as observed up to the present time).

(5) The treatment does not attract attention, and does not interfere with active pursuits.

The disadvantages of the method are:

(1) The impossibility of its application in cases where the superficial veins cannot be made prominent.

(2) The early recurrence after discontinuance of the treatment.

The last objection is the strongest point against this method of treatment, which is, however, especially adapted to those cases in which the patient fears the pain of subcutaneous or intra-muscular injections, and in which the administration of mercury by inunction or by mouth cannot be well carried out. In patients especially susceptible to mercurial poisoning it is also of advantage on account of the small doses required; and on account of the rapidity with which it acts it is indicated where an early effect is needed, for example in the affections of the eye and brain during the secondary stage. In these latter cases the treatment should be followed by a course of inunctions in order to render its effects permanent.

The method of intravenous injections, then, is to be recommended only in certain selected cases of specific disease, and, contrary to Baccelli's views, is not adapted to the treatment of all cases where mercury is indicated.

METEOROLOGICAL RECORD,

For the week ending August 31st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..25	29.92	74	83	66	62	48	55	N.W.	N.	15	8	C.	C.	.02
M..26	30.07	71	82	60	58	61	60	W.	S.W.	8	10	C.	C.	
T..27	30.03	72	80	65	72	59	66	N.W.	S.W.	3	12	O.	C.	
W..28	29.88	78	87	68	73	64	68	W.	W.	10	9	F.	F.	
T..29	29.86	70	79	61	90	89	90	S.E.	E.	7	7	O.	O.	.16
F..30	30.13	65	70	60	73	82	78	N.E.	S.E.	7	6	O.	C.	
S...31	29.84	70	80	60	82	95	88	S.E.	S.	6	12	O.	O.	.35
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 31, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,956,000	851	430	24.96	12.72	17.28	.60	3.48
Chicago . . .	1,600,000	—	—	—	—	—	—	—
Philadelphia .	1,139,457	412	201	21.84	8.16	14.64	1.92	3.60
Brooklyn . .	1,043,000	474	262	30.45	7.14	20.16	1.89	3.57
St. Louis . . .	540,000	—	—	—	—	—	—	—
Boston . . .	494,205	258	123	26.40	9.20	16.40	3.28	4.40
Baltimore . .	500,000	—	—	—	—	—	—	—
Cincinnati . .	325,000	—	—	—	—	—	—	—
Cleveland . .	325,000	—	—	—	—	—	—	—
Washington .	285,000	111	44	18.90	13.50	10.00	6.30	.90
Pittsburg . .	272,000	88	35	33.06	5.70	22.80	7.98	1.14
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	45	20	28.86	11.11	17.77	6.66	—
Charleston . .	65,165	42	19	7.14	11.90	2.38	4.66	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	42	18	40.46	11.90	28.56	2.38	—
Fall River . .	88,020	46	27	39.06	10.85	39.06	—	—
Lowell . . .	84,359	—	—	—	—	—	—	—
Cambridge . .	81,519	41	23	34.02	4.86	29.16	—	4.86
Lynn	62.355	24	10	17.44	8.32	20.80	4.16	8.32
New Bedford .	55,254	22	13	40.95	4.55	36.40	—	—
Springfield . .	51,534	12	6	33.33	16.66	33.33	—	—
Lawrence . .	52,153	—	—	—	—	—	—	—
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	20	7	20.00	—	20.00	—	—
Brockton . .	33,157	10	5	20.00	10.00	20.00	—	—
Haverhill . .	30,185	10	3	—	—	—	—	—
Malden . . .	29,706	8	2	—	12.50	—	—	—
Chelsea . . .	31,295	18	8	16.66	5.55	11.11	—	—
Fitchburg . .	26,394	10	9	70.00	—	60.00	—	—
Newton . . .	27,622	8	1	25.00	—	—	—	25.00
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	6	1	16.66	—	—	—	16.66
Waltham . .	20,877	11	3	—	—	—	—	—
Quincy . . .	20,712	—	—	—	—	—	—	—
Pittsfield . .	20,447	8	8	—	—	—	—	—
Everett . . .	18,578	—	—	—	—	—	—	—
Northampton .	16,738	9	3	44.44	22.22	33.33	—	—
Newburyport .	14,554	5	0	20.00	40.00	—	20.00	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,707; under five years of age 1,325; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 720, consumption 259, acute lung diseases 170, diarrheal diseases 491, diphtheria and croup 86, typhoid fever 55, whooping-cough 40, scarlet fever 16, measles and cerebro-spinal meningitis 12 each, erysipelas 4.

From whooping-cough Brooklyn 18, New York 10, Boston 3, Philadelphia, Pittsburgh and Worcester 2 each, Providence, Nashville and Northampton 1 each. From scarlet fever New York 4, Providence 2, Philadelphia, Brooklyn and Chelsea 1 each. From cerebro-spinal meningitis New York 9, Philadelphia, Boston, Washington, Worcester, Lynn, New Bedford and Somerville 1 each. From measles New York 7, Philadelphia 3, Brooklyn 2. From erysipelas Brooklyn 2, Boston and Fitchburg 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending August 24th, the death-rate was 19.9. Deaths reported 4,045; diarrhea 657, measles 115, whooping-cough 64, diphtheria 47, scarlet fever 46, fever 40, small-pox (London 6, Oldham 2) 8.

The death-rates ranged from 11.8 in Croydon to 35.6 in Blackburn: Bradford 22.8, Cardiff 18.1, Hull 33.2, Leeds 17.5, Leicester 15.9, Liverpool 28.2, London 17.1, Manchester 30.4, Newcastle-on-Tyne 20.7, Nottingham 17.9, Sheffield 23.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 31, 1895, TO SEPTEMBER 6, 1895.

Leave of absence for two months, to take effect on or about September 15, 1895, is granted **Captain William C. Gorgas**, assistant surgeon.

First-Lieut. Alexander S. Porter, assistant surgeon, is relieved from duty at Fort Keogh, Montana, to take effect on the expiration of his present sick leave, and ordered to Fort Huachuca, Arizona, for duty.

Major Joseph K. Corson, surgeon, granted leave of absence for two months.

Captain Leonard Wood, assistant surgeon, is relieved from duty at Fort McPherson, Georgia, and ordered to report in person to the attending surgeon in this city, for duty as his assistant.

Captain Marlborough C. Wyeth, assistant surgeon, is relieved from duty at the Army and Navy General Hospital, Hot Springs, Arkansas, and ordered to Fort Huachuca, Arizona, for duty.

Captain Julian M. Cabell, assistant surgeon, upon the expiration of his present sick leave, will be relieved from duty at Washington Barracks, D. C., and ordered to report to the surgeon-general.

First-Lieut. Frank T. Meriwether, upon the expiration of his present sick leave, will be relieved from duty at San Diego Barracks, California.

First-Lieut. Charles E. B. Flagg, assistant surgeon, upon his return from duty in the field, will be relieved from duty at Angel Island, Cal., and ordered to Fort Hancock, Texas, to relieve **First-Lieut. Francis A. Winter**, assistant surgeon.

First-Lieut. Winter, on being thus relieved, is ordered to Fort Grant, Arizona, for duty, relieving **First-Lieut. George M. Wells**, assistant surgeon.

First-Lieut. Wells, on being thus relieved, is ordered to Fort Mason, California, for duty, relieving **Captain William L. Kneedler**, assistant surgeon.

Captain Kneedler, on being thus relieved, is ordered to San Diego Barracks, California, for duty.

Captain Walter D. McCaw, assistant surgeon, is relieved from duty at the Presidio of San Francisco, Cal., and ordered to Fort Ringgold, Texas, for duty, relieving **First-Lieut. Champe C. McCulloch, Jr.**, assistant surgeon.

First-Lieut. McCulloch, on being thus relieved, will report in person to the commanding officer, Army and Navy General Hospital, Hot Springs, Arkansas, for duty at the hospital.

First-Lieut. George M. Wells, assistant surgeon, granted leave of absence for two months, to take effect on his relief from duty at Fort Grant, Arizona.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SIXTEEN DAYS ENDING AUGUST 31, 1895.

Vansant, John, surgeon. Granted leave of absence for thirty days. August 24, 1895.

Hutton, W. H. H., surgeon. Detailed as chairman, Board for physical examination of officers, Revenue Cutter Service. August 22, 1895.

Irwin, Fairfax, surgeon. Detailed as chairman, Board for physical examination of candidates, Revenue Cutter Service. August 30, 1895.

Banks, C. E., passed assistant surgeon. Detailed as member, Board for physical examination of candidates, Revenue Cutter Service. August 30, 1895.

Young, G. B., passed assistant surgeon. Upon expiration of leave of absence to report at Bureau for temporary duty in laboratory. August 28, 1895.

Brown, B. W., passed assistant surgeon. Detailed as recorder, Board for physical examination of candidates, Revenue Cutter Service. August 30, 1895.

Sprague, E. K. Detailed as recorder, Board for physical examination of officers, Revenue Cutter Service. August 22, 1895.

Greene, J. B., assistant surgeon. To proceed from Washington, D. C., to Wilmington, N. C., for temporary duty. August 22, 1895.

SOCIETY NOTICE.

American Public Health Association. – The twenty-third annual meeting will be held at Denver, Col., Tuesday, Wednesday, Thursday and Friday, October 1, 2, 3, 4, 1895.

CORRECTION.

Through an oversight the statement, "recommended for publication by the Society," was not added to the note appended to Dr. Goodale's paper on "The Preparation of Diphtheria Antitoxin," which was read before the Massachusetts Medical Society at its annual meeting and which may be found on page 235 of the Journal.

RECENT DEATHS.

Dr. Felix Hoppe-Seyler, Professor of Physiological Chemistry in the University of Strasburg, died on August 12th, at the age of seventy years.

Thomas H. Chandler, M.D., D.M.D., Dean and Professor of Mechanical Dentistry in the Harvard Dental School, died August 27th. The office of dean of the Dental School he had held for twenty-one years. In his earlier years he had studied law and graduated from the Harvard Law School in 1853, but was not able to enter the practice of law at once on account of trouble with his eyes. In 1858 he studied dentistry, but later medicine, retaining dentistry as his profession. He was a faithful executive officer devoted to the interests of the Dental School, a thorough master of his profession, and had published papers of professional interest and value in various medical and dental journals.

BOOKS AND PAMPHLETS RECEIVED.

The Chicago Physio-Medical College, Annual Announcement 1895–96, Tenth Session.

Report of Two Cases of Crushing Injury to the Arm. By E. J. Mellish, M.D., Chicago, Ill. Reprint. 1895.

Strabismus as a Symptom, Its Causes and its Practical Management. By Leartus Connor, M.D., Detroit, Mich. Reprint. 1895.

A Practical Low-Priced Device to Secure the Trendelenburg Posture. By William A. Edwards, M.D., San Diego, Cal. Reprint. 1895.

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Practical Dietetics, with Special Reference to Diet in Disease. By W. Colman Thompson, M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine in the University of the City of New York; Visiting Physician to the Presbyterian and Bellevue Hospitals. New York: D. Appleton & Co. 1895.

The Science and Art of Obstetrics. By Theophilus Parvin, M.D., LL.D., Professor of Obstetrics and the Diseases of Women and Children in Jefferson Medical College, Philadelphia. New (third) edition. In one very handsome octavo volume of 677 pages, with 267 engravings and two colored plates. Philadelphia: Lea Brothers & Co. 1895.

Indurative Mediastino-Pericarditis. By Thomas Harris, M.D. (Lond.), F.R.C.P., Physician to the Manchester Hospital for Consumption and Diseases of the Throat and Chest, and Lecturer on Diseases of the Respiratory Organs in Owens College; Author of the "Post-Mortem Handbook." Reprint. 1894–95. London: Smith, Elder & Co. 1895.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum........................
Albany Medical College........................
Anheuser-Busch Brewing Association........
Antikamnia Chemical Company...Antikamnia
Armour & Co............The Armour Laboratory
Baker, L. W., M.D.... ....Riverview
Baker, Dr. W. H..............................Caro
Battle & Co. ....Bromidia
Bellevue Hosp. Med. Col..... Sessions of '94-95
B. H. R. Distilling Co........................
Borine Chemical Co..............................26,
Bowdoin College...........Medical Department
Bowker, Dr. E. M........... ......Vaccine Virus
Boylston Medical Prize Questions...........
Breitenbach Co., M. J...........Pepto-Mangan
Channing, Dr. Walter..........................
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Gear, J. Frank ....Surgical Instruments
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Ring, Dr. Allan Mott.........Nervous Diseases
Russell, Dr. F. W ....Card
Schieffelin & Co....................Mfg. Chemists
Schulze-Berge & Koechl......Migranin, etc. 11,
Seeley, I. B. & Co.......... .Hard Rubber Trusses
Sharp & Dohme....................Mfg. Chemists
Stedman, Dr. Henry R.........................Card
Tanner, E. S..........................Publisher
Thayer, Henry & Co....................... ....
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Clinical Microscopy [1]	Dr. Whitney	Mass. General Hospital	17	June 1	June 29	Tu. We. Fr. Sat.	11.30	15.00
Clinical Microscopy	Dr. Whitney	Mass. General Hospital	18	July 1	July 31	Tu. We. Fr. Sat.	11.30	15.00
Clinical Microscopy	Dr. Whitney	Mass. General Hospital	16	Sept. 3	Sept. 28	Tu We. Fr. Sat.	11.30	15.00
Chemistry [3] [4]	Dr. Hills	Medical School	30	June 24	July 27	Daily	10	30.00
Medical Chemistry [4] [5]	Dr. Ogden	Medical School	30	July 1	Aug. 3	Daily	1	30.00
Pathological Anatomy [6]	Dr. Taylor	Medical School	14	July 1	July 31	Mo. We. Fr.	3	20.00
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Clinical Obstetrics [1]	Dr. Townsend	Lying-in Hospital	8	Sept. 2	Sept. 27	Mo. Fr.	12	15.00
Clinical Obstetrics [1]	Dr. Haven	Lying-in Hospital	9	July 1	July 29	Mo. Fr.	11	15.00
Operative Obstetrics	Dr. Haven	Medical School	11	July 8	July 19	Daily	4	20.00
Diseases of Children [10]	Dr. Buckingham	Children's Hospital	18	June 1	July 30	Mo. Th. Sat.	10	20.00
Diseases of Children [11]	Dr. Wentworth	Children's Hospital	18	Aug. 1	Sept. 28	Daily	10	20.00
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Diseases of the Eye [1]	Dr. Standish	Eye and Ear Infirmary	13	July 2	July 30	Tu. Th. Sat.	10	20.00
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Diseases of Women [1] [13]	Dr. Burrage	St. Elizabeth's Hospital	13	July 18	Aug. 29	Mo. Th.	10	25.00
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PAGE

LECTURE.

METRITIS AS A CAUSE OF MISCARRIAGE. *By Charles Greene Cumston, B.M.S., M.D.*, Instructor in Clinical Gynecology, Faculty of Medicine, Tufts College; Member of the Société Française d'Electrothérapie; etc. Lecture IV 281

ORIGINAL ARTICLES.

COTTAGE HOSPITALS. *By Morrill Wyman, M.D.*, Cambridge, Mass 284

THE MODIFIED MILK QUESTION. *By A. Worcester, A.M., M.D.*, Waltham, Mass 287

CLINICAL DEPARTMENT.

BRIEF NOTES OF A THOUSAND CASES IN OBSTETRIC PRACTICE, EXTENDING OVER A NUMBER OF YEARS. *By James Venables, M.D.*, (*Harv.* 1867), Halifax, N. S 289

MEDICAL PROGRESS.

REPORT ON DERMATOLOGY. *By John T. Bowen, M.D.* 290

Milium Congenitale (En Plaques).— Eruptions caused by Antitoxin. — Local Anesthesia in Dermatology. — Dermato-Neuroses and their Treatment.— Eleidin in Normal and Pathological Skin.— Camphorated Salol.— Erythromelalgia.

PAGE

REPORTS OF SOCIETIES.

FIFTH ANNUAL MEETING OF THE HARVARD MEDICAL ALUMNI ASSOCIATION. (Concluded) .. 294

Speech of Dr. George J. Engelmann.— Speech of Dr. John Green.

AMERICAN LARYNGOLOGICAL ASSOCIATION. SEVENTEENTH ANNUAL CONGRESS, ROCHESTER, N. Y., JUNE 17–19, 1895 298

The Relation of Damp Air to Diseases of the Air-Passages, Particularly in the Lake Region. — Dessicated Thyroids in Goitre. — Electrolysis by a Current-Controller for the Reduction of Spurs of the Nasal Septum.— Two Cases of Lipoma.— Some Remarks on Removal of the Tonsils.— Melancholia Cured by Intra-Nasal Operation. — Suppurative Ethmoid Disease, followed by Invasion of the Sphenoidal Sinus, Abscess of the Brain and Death.— A Consideration of Some of the More Important Principles of Intra-Nasal Surgery. — A Further Contribution to the Study of Suppurative Disease of the Accessory Sinuses.—Ludwig's Angina.

RECENT LITERATURE.

Manual of General Medical Technology, including Prescription Writing. By Edward Curtis, A.M., M.D. William Wood & Co. 1895 301

EDITORIALS.

EXPERIMENTAL DEGENERATIONS FOLLOWING UNILATERAL LESIONS OF THE CORTEX CEREBRI IN THE MONKEY 302

PAGE

THE INFLUENZA BACILLUS AND ABSCESS OF THE LUNG 304

MEDICAL NOTES 304

Schede Succeeds Trendelenburg. – The Tri-State Medical Society.— The Library of Professor Ludwig.— The Metric System in Great Britain.— The German Society of Naturalists and Physicians.— An Adequate Characterization.— A Parisian Remedy.— A Medical Poet of Finland.

New England.

Acute Infectious Diseases in Boston. — Diphtheria in Beverly.— The Carney Hospital in Need.— The Training-School for Nurses at Long Island.

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Bequest to the New York Post-Graduate Medical School and Hospital. – Punishment Fit for the Crime.— The Walker Memorial Hall. — A Race Course becomes a Reservoir.— An Unseasonable Death from Heat-Stroke.— Suicide of Dr. Lyon. — Brooklyn's Death Rate Decreases.

MISCELLANY.

THE DEAN OF NORWICH ON DOCTOR'S BILLS... 306

HYSTERIA IN THE MALE. 306

METEOROLOGICAL RECORD, SEPTEMBER 7, 1895.. 307

RECORD OF MORTALITY, SEPTEMBER 7, 1895.... 307

ARMY AND NAVY SERVICES 308

APPOINTMENTS 308

SOCIETY NOTICE 308

RECENT DEATH 308

BOOKS AND PAMPHLETS RECEIVED 308

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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See pages 16, 17, 18 and 19.

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VINOLIA SOAP,

PAGE 18.

Lecture.

METRITIS AS A CAUSE OF MISCARRIAGE.[1]

BY CHARLES GREENE CUMSTON, B.M.S., M.D.,
Instructor in Clinical Gynecology, Faculty of Medicine, Tufts College; Member of the Société Française d'Electrothérapie, etc.

LECTURE IV.

GENTLEMEN: In this lecture I propose to finish the subject of metritis as a cause of miscarriage; and in order to do so, I must consider the following points: the course of pregnancy complicated by metritis or endometritis, the mechanism of these abortions, the diagnosis, prognosis and treatment.

It is in no way a general rule that the symptoms of an endometritis are present during gestation. Sometimes the progress is perfectly normal and the pregnancy goes to term, and it is only after labor that the inflammatory changes are found in the placenta and membranes.

Pregnancy may go on undisturbed for a few months, when suddenly pains and hemorrhage appear, quickly followed by an abortion; in this case it is the decidua that will give a clue to the cause of the miscarriage. Generally speaking, endometritis of pregnancy will show its presence by various symptoms, these being principally the same as those of an endometritis of the non-pregnant organ, only they are more marked in the former. They differ according to the extent of the lesions of the mucosa and time of pregnancy at which they occur. Those that take place during the first six months will only be studied.

The most important and constant symptom is hemorrhage. Its origin is most varied. Usually when the vessels of the decidua serotina are inflamed, they become friable and rupture easily, thus bringing about a partial detachment of the placenta, while the blood, breaking its way between the decidua and wall of the uterus, appears.

If the inflammation of the mucosa is slight, the hemorrhage may be trifling and of short duration, without any symptoms, so that the patient pays little attention to it; but when the endometritis is more severe, hemorrhage is provoked by very slight causes, which in the healthy woman would be without effect, and they will persist or stop for a short time only to commence on the slightest occasion. The other symptoms are not long in showing themselves.

The blood of these hemorrhages is sometimes bright red and pure, but generally it is mixed with a watery fluid and vaginal or uterine secretions. Sudden and severe hemorrhage may occur, bringing about miscarriage more or less rapidly. This takes place in endometritis following acute infections such as cholera, typhoid, small-pox, etc.; or they may occur in cases of old hemorrhagic metritis.

Leucorrhea is a nearly constant symptom. It may be overshadowed by the blood, but it exists here in some way or another, just the same as in a metritis in the non-gravid uterus. In passing, let me recall to your minds that leucorrhea is the exaggeration and morbid change of the normal secretion of the uterus.

Leaving aside the description of the watery, milky-colored vaginal leucorrhea, which has nothing to do with our subject, because it is the uterus that is affected, I shall simply describe the discharge from this organ. When it comes from the corpus it is a whitish-yellow and thick, while that from the cervix is usually gelatinous and whitish-yellow, sometimes greenish-yellow, and purulent, with an alkaline reaction. Occasionally the secretion from the cervix is only a liquid mucus, containing a few leucocytes; while in other specimens, although it may be viscid and transparent, it is, nevertheless, virulent, and may contain gonococci. Leucorrhea varies greatly as to quantity, and is generally not continuous. I do not mean that the secretion is not constant, but the product of this secretion is only evacuated at intervals. It accumulates first in the vagina, and escapes from time to time in small quantity from the vulva.

Hydrorrhea is a colorless liquid discharge; it is clear, slightly viscid, sometimes tinted pink, and of a gummy consistency. The spots produced by this discharge are sometimes almost invisible, at others they are pinkish with a darker border. The principal characteristic of hydrorrhea is its manner of appearing which is by a sudden profuse flooding of watery fluid coming on without any apparent cause. When the quantity exceeds 800 grammes, the hydrorrhea may be preceded by an increase in the size of the uterus, which is discovered by palpation, and the patient may also complain of a sensation of tension and weight, which will disappear after the liquid has come away.

This discharge from the genital organs, which usually appears in the midst of apparently perfect health, may not occur again, and does not produce any serious trouble. However, it is not uncommon for the discharge to appear at irregular or regular intervals. Sometimes the floodings succeed one another with increasing frequency; at others they come on at intervals farther and farther apart. The quantity of the discharge varies in different cases, increases or diminishes. Between the intermittent jets there is usually no discharge, although this is not always so. In a case reported by Roy the hydrorrhea was first colorless and then became bloody, appearing at rather long intervals for two months and a half. In a case reported by Zielinski, the patient had four watery discharges, which were preceded by lumbar and abdominal pains; this discharge became pink and later red.

Pains may accompany the above symptoms, or come on alone, being the only symptom of an inflammation of the mucosa. Their type varies. If they accompany a slight hemorrhage, they do not amount to much; but if they occur during a serious flooding, they are intense and increase as the time of expulsion approaches.

Ordinarily, hydrorrhea is accompanied by a malaise and disagreeable sensations in the pelvis. The accompanying pains vary in different subjects, according to the susceptibility of the nervous system. The subjective symptoms are sometimes so slight as to pass unnoticed; at others they are marked by continuous or intermittent pains in the pelvis and hypogastric regions, extending down towards the sacrum and upper part of the thighs. When severe, the subject has difficulty in walking, etc.

The origin of the pains is in the uterus, but their seat may be in different parts of the body. The hypothetical rheumatism of the uterus has also been put forward to explain the pain.

It is impossible to diagnose the type of endometritis from the character and seat of the pain; and it is likewise difficult to explain the cause, although Veit thinks that perhaps they might be attributed to small hemorrhages in the decidua which are slowly undergoing resorption, as well as to small inflammatory foci.

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[1] Being four Clinical Lectures delivered at the Suffolk Dispensary, Boston.

Endometritis may finally produce a rupture of the membranes, because the inflammation of the decidua causes the chorion and amnios to become so thin and friable that when even a slight traumatism is inflicted, such as a little jar, going from one room to another, it may result in their rupture. Other symptoms of endometritis often precede the rupture of the membranes, although exceptionally, this accident is the first indication of the disease.

Now, if you examine the uterus of a pregnant woman with endometritis, you will generally not find any distinct signs. Frequently its size does not correspond to the age of pregnancy; it will be larger. Sometimes it changes in dimensions; for example, after the liquid of an hydrorrhea has been expelled, it decreases, and the walls which were distended become soft and are easier to palpate. *Per vaginam*, the lower segment of the organ may perhaps be found thickened and inflamed, rendering the fetal parts imperceptible to the examining finger. Palpation or vaginal examination may cause considerable pain for the patient, the least pressure on the abdomen, cervix or inferior segment of the uterus produces suffering.

By the speculum, beside erosions, lacerations, etc., you will sometimes be able to see characteristic ulcerations having a fungoid appearance and a crater-like depression. These lesions alone, which were present before pregnancy, are a danger, not directly in themselves, but because they are often the indication of similar inflammatory lesions in the corpus uteri.

As parenchymatous metritis is very often accompanied by an endometritis, the symptoms of the inflamed mucosa may often be present. On the other hand, if the parenchymatous metritis is of long standing, the endometritis may have disappeared and left behind only such traces as partial sclerosis or a few indurated points. In this case the leucorrhea, hydrorrhea and hemorrhage may be wanting. There is one symptom, however, which is never absent, and that is pain. This may be more severe than in any other type of metritis, and is explained by the extreme distention of the uterus.

By a very careful examination of the uterus *per vaginam* you may sometimes feel an induration of the walls of the organ; but, I repeat, this condition is rarely discovered.

The most characteristic symptom of an inflammatory condition of the mucosa is to be found in the antecedents of the patient when she tells you that she often aborts and that the accident usually takes place at about the same period of gestation.

The progress of a miscarriage due to an endometritis is about the same as in miscarriage from any other cause.

There are two signs worth remembering, to which I wish to call your attention. In the case of a fetus directly poisoned by the specific organism and toxines of any of the acute infectious diseases, *it first dies and is then expelled*, while in endometritis it is *expelled alive* in the larger number of cases. There are, of course, many exceptions, and I have pointed out to you that a diseased decidua will produce nutritive troubles in the ovum resulting in its death.

Another sign of miscarriage produced by endometritis is the retention of the placenta and membranes. This may occur in any abortion, especially those which take place during the third and fourth months, because the connections between the uterus and placental tissues are intimate. But if the decidua is inflamed, in which case many of the glands are destroyed and their place occupied by connective or even fibrous tissue, adhesion of the membranes and placenta are quite frequent.

The latter organ is only infrequently completely adherent, but if so, it may be retained in the uterine cavity for many months without giving rise to any symptoms. It finally undergoes a granulo-fatty degeneration, then sclerosis, and is at last spontaneously or artificially delivered.

Partial adhesion is far more frequent. Sometimes the placenta is partly detached and partly adherent, in which case two of the most serious complications occur, namely, hemorrhage and septicemia. At other times the placenta is only partly expelled, and the remaining part is found adhering to the uterine walls. This latter may be quite considerable in extent and give rise to no symptom up to the time that it is expelled, but when it becomes detached hemorrhages are wont to appear.

In other cases you may have a very small piece of placenta adhering intimately to the walls, and this may also remain for a relatively long period in the uterine cavity. This very adherent placental *débris* may produce hemorrhages which are sometimes most serious, and have been denominated *deciduoma*.

The diagnosis of puerperal endometritis is in most cases very difficult to make, and the only positive pathological sign is an inflammation of the decidua. It consequently is only after abortion has taken place that the diagnosis is made; but in some cases shreds of the decidua are expelled, and after a microscopical examination the inflammatory process going on in utero may be suspected.

But unfortunately these favorable cases for diagnosis are infrequent, and you will have to content yourselves with the symptoms which are far from being characteristic. Consequently you should proceed to make a differential diagnosis in a most careful manner.

In the first place the patient's antecedents regarding the menses, pregnancies, labors and post-partum period should be carefully inquired into, as you know the great value of some knowledge on these points; and especially is this true in cases of endometritis. If you find that the former pregnancies were interrupted, if the labors were complicated by placenta previa or retention of the afterbirth, if the decidua was thick, all these facts will help you in your diagnosis, because they all can be produced by an endometritis.

Now, if you learn that your patient was infected during her last labor, or post-partum, or if she has gonorrhea, syphilis, or an acute infectious process, if she has suffered for some time with a metritis, why then your diagnosis becomes easier to make.

It now remains for me to say a few words regarding the actual symptoms of the affection. Intermittent hemorrhages produced by a slight cause are to be especially noted; their particular point is their repetition for several weeks before miscarriage up to the time this takes place. But you must not forget that you may have to deal with some heart lesions, fibroids or cancer of the uterus or cervix, varicosed veins of the external genitals, placenta previa, albuminuria, traumatism, etc., all of which may have hemorrhage for a symptom; and you must eliminate these. You should always examine the general health of a pregnant woman, the condition of all her viscera, and above all, the internal and external genital organs, not forgetting to examine the *odor* of the blood passed (if this occurs) as well as the quantity and frequency.

Leucorrhea which is very common, must be examined to ascertain if it be vaginal or uterine; in the latter case if it comes from the corpus or cervix, or if it is simply due to a defect in the general nutrition from anemia or chlorosis.

A watery discharge should be carefully looked to, as its origin is most important to ascertain. Do not forget that a *thin watery and nearly odorless discharge* may be due to a commencing carcinoma uteri.

If it is the amniotic fluid and if the ovum has ruptured, the walls of the uterus will be found retracted on the fetus, which will be slightly immovable on account of this pressure. An intra-cervical digital examination, by displacing the fetus, will give rise to the appearance of a serous liquid in which lanugo and sebaceous magna will be found; the liquid will trickle away slowly but continuously.

The characters of decidual hydrorrhea are different in every respect; the amniotic pouch is closed and in spite of the watery discharge distinct ballottement can be produced. Occasionally the discharge is only an involuntary emission of urine or the elimination of leucorrhea which has accumulated in the vagina; but here the nature and odor of the liquid is quite sufficient to prevent an error in diagnosis.

You must be guarded in your opinion as to the pains which will be complained of by your patients, because the description given is usually far from clear. Women usually give you the impression that they are suffering from nephritic or hepatic colic, gastralgia, cancer or neuralgia; so I again warn you not to base your diagnosis on the symptom of pain alone, for generally you will be terribly deceived. Do not forget to note whether the pains are accompanied by uterine contractions, thus announcing approaching labor.

Let me impress upon you the fact that *not one symptom taken alone* will justify you to make a diagnosis; it is only when you have *all the symptoms, plus a history of the last pregnancy and antecedents of the patient*, that you can feel that you have a rather complete picture of puerperal endometritis.

The prognosis for the mother in this form of endometritis, depends on her general condition, the severity of the disease and its cause. You will easily understand that the hemorrhagic variety, which is encountered in the acute infectious diseases, is far more serious than old chronic endometritis with its slight losses of blood or watery discharges, which have little effect on the health of the woman. As a matter of fact there is a great difference in the prognosis of an inflammation of the mucosa in a strong healthy woman and a subject already exhausted from chlorosis or tuberculosis.

You should always have in mind two possible complications, namely, ante-partum hemorrhage and the retention of the membranes or placenta. The hemorrhage may be so considerable as to endanger the life of the patient and the blood is sometimes so fluid that it flows in great quantity, while in other cases clots form and accumulate in the vagina, acting like a tamponade.

A hemorrhage, as you are aware, gives rise to quite marked general symptoms, pallor of the teguments, small bounding pulse, tinnitus aurium, troubles of sight, etc., while there is also often a tendency to syncope.

A retention of the membranes or placenta will also render your prognosis more sombre, because this condition may be the cause of a post-partum hemorrhage or even septicemia.

A post-partum hemorrhage is either continuous or intermittent, profuse or slight. It takes place soon after the expulsion of the product of conception, but may, although infrequently, occur from ten to thirty-five hours after. In the first instance it is produced on account of the retained *débris* preventing the uterus from firmly contracting upon itself; while in the second it is due to the tardy detachment of the retained mass, which leaves the uterine vessels largely opened. This loss of blood is not always an immediate danger for the patient, but it produces a most serious anemia, which will only be overcome by a long and well-directed medical treatment and cleaning the uterus out.

Septicemia comes on a short time after if abortion occurs, as the uterus remains half opened for the exit of blood, and the infection is thus able to have easy access to the interior of the organ. If the placenta is partially detached, thus having its blood-supply in part cut off, putrefaction takes place from the contact of air, and it consequently becomes a source of infection. Septicemia is often produced by unclean hands employed in a vaginal examination, or by faulty asepsis of instruments, dressings, etc.

Septicemia will very often leave behind serious lesions of the uterus or adnexa. Do not forget this; and if you have the misfortune to treat a case of this kind, do your work thoroughly, and in so doing you will probably prevent a salpingitis and peritonitis.

Occasionally the fever persists, the chills come back, and the patient dies from the progress of a putrid infection; but there are also cases in which the symptoms of auto-infection suddenly disappear after a spontaneous or instrumental elimination of the placental *débris*.

When the membranes alone are retained, hemorrhage and infection are far more infrequent.

The retained remains of the placenta or decidua adhering to the uterine walls may enter into the formation of a deciduoma, which is a source of very severe hemorrhages. Küstner states that a retained decidua and chorion may give rise to a malignant deciduoma, which statement has been corroborated by Mové-Josséraud, Lacroix, and Jeannel and Bacon.

As to the treatment, I may say at once that it is very difficult to treat an endometritis as long as pregnancy is going on. The only good practice is the preventive treatment which is undertaken when the uterine cavity is empty in cases in which an inflammation of the uterine mucosa has occurred before the pregnancy or when it has already produced miscarriages.

There are to-day many recorded cases of women who had aborted several times and who became pregnant after a cure of the endometritis had been obtained, and went normally to term.

The treatment applied to endometritis has been most varied, but there is no doubt but that a well-conducted curettement of the uterine cavity is the best and most proper method. It is generally accepted that after removal of the mucosa by the curette, this will be reproduced in such a way that a normal conception and pregnancy will take place; but it is difficult to indicate with certainty at what time the endometrium will have become really apt for this new function.

It is generally believed that the first menses after curettement is a proof of a cure of the endometritis and as indicating the presence of a healthy mucosa. There are, however, cases which plainly show that although all symptoms of inflammation of the mucosa have disappeared and the menses are normal, the endometrium is not in a condition which will allow the ovum to develop.

When the endometritis is dependent on a general infection, a general treatment must be instituted; for example, mercury in syphilis.

Preventive treatment is often crowned by success in cases of parenchymatous metritis; but here curretement is rarely indicated, and will do little, if any, good when performed. If there are indurations in the walls of the uterus which are due to old inflammatory exudation, I would strongly advise a course of massage, which will give most excellent results; but on the condition that it is properly and scientifically done. Those of you who are desirous of possessing an idea of the technique of massage of the female genital organs will do well to read my translation of two lectures on the subject by my esteemed teacher, Professor Vulliet, and which was published in the *Annals of Gynæcology and Pædiatry* in 1890.

When you are in presence of a hemorrhage or uterine pains, the preventive treatment of abortion in general should be the one of choice. This consists of a quiet in bed, enemas of laudanum or chloral hydrate, hyperdermic injections of morphine, etc. But if abortion is threatening, you must not hesitate to act immediately; and for the hemorrhage a well-applied vaginal tamponade, with iodoform gauze, should be practised.

Now, if miscarriage is inevitable, either because the death of the fetus is certain or because the membranes have ruptured, you should not delay the expulsion of the ovum. All that is necessary under the circumstances is to irrigate the vagina thoroughly with a one-per-cent. solution of sulpho-naphthol or some other good antiseptic, and have before your minds that *a miscarriage demands more strict antisepsis and more care than a normal labor.*

When the placenta or membranes are retained, I think it advisable to remove them with a dull Rheinstædter curette, but do not forget that the *walls of the uterus after labor are thin and easily — yes, very easily — perforated by your instrument,* a complication that you all want to avoid. After you have removed the retained *débris*, a hot intra-uterine irrigation should be given, and the cavity packed with iodoform or europhen gauze.

DR. NORBURY ELECTED TO A COLLEGE CHAIR. — Dr. Frank Parsons Norbury, who recently removed to St. Louis to assume the editorial management of the *Medical Fortnightly*, has been elected to the chair of Practice of Medicine and Clinical Medicine in the St. Louis College of Physicians and Surgeons.

Original Articles.

COTTAGE HOSPITALS.[1]

BY MORRILL WYMAN, M.D., CAMBRIDGE, MASS.

THE Cambridge Hospital, which may serve as an illustration of the subject of this paper, is situated about one mile west of Harvard College, on the south side of Mt. Auburn Street. The site has 9 1-3 acres. The soil is dry and gravelly; it has few trees, but is well covered with grass. The surface upon which the buildings stand is well raised above the crown of the street, is about 25 feet above the level of Charles River and 600 feet from its left-bank, along which it has a water front of 500 feet. On the opposite bank is a park or meadow of 100 acres, of which 70 acres were given by Prof. Henry Wadsworth Longfellow and others to Harvard College "to be held," so says the deed of gift, "by the grantees as marshes, meadows, gardens, public walks or ornamental grounds, or as the site of college buildings not inconsistent with these uses"; the other 30 acres were given to Harvard College by Major Henry Lee Higginson to be called the "Soldier's Field." The river in front, here about 250 feet wide, and the meadow beyond effectually exclude all dust, smoke and noise from that direction. The view to the south is unobstructed quite to Corey's Hill, two miles away. The whole forms a scene the equal of which in beauty and fitness for the purposes to which it is consecrated it would be hard to find. Longfellow and Lowell have sung of the "Silent River" and its meadows.

The hospital buildings are a centre and two wings or wards, the three forming a hollow square with the opening towards the south; a corridor, also facing the south, joints the two wards. This corridor is glazed in winter. With this orientation each ward receives the full influence of the sun and the free course of the very desirable southwest breezes of summer.

The ward to which the following observations refer is 60 feet by 30 feet, and 12 feet high, the ceiling higher in the middle than at the walls, with 21,000 cubic feet of space, giving 113 square feet of flooring and 1,356 cubic feet of space for each patient. It has five windows on each side. At the south end is the sun-room, 8 feet by 30, open or glazed as the season may require. The 16 beds in each ward (the hospital has 40 beds) are arranged with the head next the wall and about one foot from it, well out of the way of direct currents. Beneath each bed is an eight-inch pipe which rises about three inches above the floor and is connected beneath it with a foul-air duct leading to the ventilating chimney of 16 square feet area and 60 feet in height. The other ventilating apertures are the windows, of about 20 square feet each, with movable sashes, double in winter, with a deflecting board above the upper sash for the better distribution of the incoming air. Each of these windows gives, when open, an area of nine square feet. There are two openings in the ceiling of about 10 feet area each; in the middle of the ward is a chimney with fireplaces on two of its sides. They are frequently used in the mild weather of spring and fall. Above the ceiling are two trunks for ventilating the attics, and 14 openings on the sides, just beneath the eaves, and protected from the rain; when open in summer these openings allow of the free movement of the winds over the floor, materially cooling it and the ceiling below.

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[1] Read before the Cambridge Society for Medical Improvement, March, 1895.

Beneath the ward and extending under the whole of it, is the air-chamber; it is eight feet high, two and a half feet of which is above the ground; it has 16 windows of four square feet each, giving sunlight and air to every part; it has also a doorway of 40 square feet, the whole giving 100 square feet of openings for air. The walls are of stone and mortar, with a carefully-made cement floor, well smoothed. This is exclusively an air-chamber. It contains only the heating-boxes and the flow and return pipes connecting them with the two boilers in the administration building. There are 10 of these heaters of about 18 cubic feet each, set close under the ward floor; they contain the cast-iron radiators, each with 30 square feet of heating surface, known as Gold's pin radiators, through which the hot water passes, entering at the top and going out at the bottom on its way from and to the boilers. The moving force is due to the difference in temperature, which causes a difference in density in the balancing column of water, in the flow and return pipes. The difference of temperature is 40° to 50°; the flow pipe is about six feet above the return. The air enters these heating-boxes from the air-chamber, or, directly from the outer air through ducts controlled by valves, and enters the ward through 10 registers of 1.5 square feet each about 18 inches from the floor, one beneath each window, which is between each two beds.

The ward floor is of two-inch planks supporting a hardwood floor; it is what is called a mill or slow-burning "Swiss" floor; it has no plastering or enclosed space of any kind below it.

The air-chamber is kept scrupulously clean and free from dust; no furniture nor anything else is allowed in it under any pretence whatever. Its office is solely to receive fresh air and distribute it to each of the ten boxes, in equal quantity to reach the ward unchanged in every respect except in temperature. This may be criticised as a waste of room, but we know to what base uses cellars are generally put and the effect they might have upon the ward above. This chamber is lighted by direct sun-light; it receives air freely; it is surrounded by gravel; it is dry; and it secures nearly all, if not all, the advantages claimed for buildings standing upon piers above ground, with the additional advantage of controlling the admission of cold air in winter, essential in this climate. The equal distribution of the air to each of the ten registers can hardly be so well secured in any other way. It is for these reasons that the air-chamber has been so constructed, and its eight years of use have proved its value.

The bed, in which most of the days and nights of the hospital patient is spent from entrance to convalescence, is worthy of careful consideration. It is to the bed that most of the hospital arrangements refer. Its place, as regards windows for light and air, its distance from the wall to avoid down-draughts, its height and breadth for convenience of nursing, and its ventilation must all be cared for. Its coverings must be light, warm, and the more air there is in their folds and meshes the warmer they are; the under-beds of hair or vegetable fibre, must be porous that air may pass through them, and elastic that they may bend to and properly support the unequal pressure of the body.

The bed is a piece of apparatus with a system of warming and ventilation of its own, as necessary and as complete, in its way, as the ward in which it stands. The body warms the bed, its coverings and its contained air, and this in turn the entering air. The heat is always on the move upward and outward. If any one will take the trouble, his thermometer will show that the fresh air enters at the sides, is warmed by contact with the body, rises through the successive layers of coverings, which delay without arresting its progress, until it reaches the surface, leaving the outer covering instead of our sensitive peripheral nerves to fight for us our battle with the surrounding cold. But this is not all; the bed-clothes, if porous, allow the passing air to carry off perspiration and the other skin secretions, miscible with it, which if retained saturate the clothes and cause uneasiness in the skin and general discomfort.

More or less air enters the bed from beneath, as well as at the sides. The space beneath the bed, therefore, must be kept scrupulously clean and the air pure. Each bed has, to this end, an outlet in the floor, connected with a duct beneath it, leading to the main ventilating chimney; the coverlet falls no lower than is necessary to prevent its too easy displacement, but not so low as to prevent the free movement of the air and the ready inspection of the whole floor beneath.

The sick take less food than the well, they sleep more, they consequently make less heat; furthermore their horizontal position favors the escape of the warm air around them; for these reasons their heat in winter should be economized, their clothing warm, and the weak, especially the aged, who make but little heat, have hot-water bottles at their sides, not so much to warm their bodies by actual contact as by intercepting and warming the incoming air before it reaches the body and keep up the peripheral circulation so that the internal heat-making organs may have less work to do.

By the arrangements just described the bed is of necessity ventilated into the ward. But sometimes the bed itself is filled, and the clothing impregnated with offensive gases, which moved by the heat of the body and the respiratory motions enter the ward and contaminate the air in the vicinity to a degree that no general ventilation of the room can at once remove. To prevent this, a pipe of two inches diameter, is connected with the opening under the bed, and led into any part of it. By this simple device foul air is drawn from the bed or bed-pan and fresh air from the ward properly warmed in the way just mentioned — if need be, substituted. This done, the patient is no longer surrounded by a tainted atmosphere ready to be inhaled or absorbed by abraded surfaces, nor the air of the ward contaminated.

The patient no longer an object of disgust, isolation in a separate room is unnecessary; otherwise, in spite of deodorizers and antiseptics, the vicinity may be-become absolutely intolerable. Isolation increases the expense of treatment and the number of nurses; and what is more, it deprives the wretched sufferer of what comfort he can get from association, a comfort that no hospital should overlook.

It is in this way that the bed has its own system of heating and ventilation.

This system has been applied to all the bath-tubs, water-closets and sinks. All these have in common a soil-pipe of six inches diameter, with two running traps — one at the closet and another outside the hospital building. Between these traps the soil-pipe has a branch air-pipe of the same diameter, reaching to the top of the chimney, sixty feet high. This air-branch is surrounded by a jacket ten inches in diameter, which receives all the waste heat from the kitchen fire. This secures a constant in-draught from all points with which it is connected, or from leaks or cracks in the soil-pipe. It is connected with the hopper of the water-closet by a short two-inch pipe, never larger (like that for the bed), that passes round the trap into the soil-pipe and from that into the air-branch.

The common cold-air ventilating pipe in our houses, going through the roof, has no draught; it relieves pressure between the traps, but has no effect upon parts outside the traps, from which very bad odors often flow into our rooms. This hospital arrangement, with the two-inch connecting pipe always in action, keeps the water-closet and all its connections free from odor at all times, even when in use, while the large soil-pipe rapidly discharges the contents of the hopper and its wash into the common sewer. All fluids and solids go to the sewer, and all gases and odors to the chimney-top. As with the bed, this also is one of the few instances in which we can seize the evil at its source and quickly and effectually dispose of it. This method of ventilating privies with a fire is by no means new; it was used in the fourteenth century at Pierrefond, in France, where there are three privies, one in each story, connected with an air-tight vault under ground and a heated chimney going through the roof.[2]

Preparatory to ventilation we must have cleanliness of walls and floor. Every part of a ward that can be reached with water and soap or with a wet cloth must be cleaned. No dusting allowed; that only takes dust from one part to scatter it over all others. The coverlets of the bed must be shaken in the open air. The secretions and transpiration of patients removed as soon and as completely as their conditions will allow. At the Cambridge Hospital the floors are every morning first strewn with moist sterilized red-cedar sawdust, which is both cleanly and fragrant, and then carefully swept. By this means careless sweeping is betrayed and its consequences prevented. Ventilation begins where what is commonly called cleanliness leaves off.

Ventilation is the removal of foul air by the introduction of that which is pure from the open, generally without change except in temperature.

At the Cambridge Hospital at those seasons when the ventilation is principally by the registers, air from the air-chamber enters the ward by the ten registers already described, nearly horizontally between and parallel to the beds, rises towards the middle of the ward until it meets that from the opposite register, when its direct motion is lost in eddies and various movements mingling and moving with the foul air until it is practically distributed through the whole ward; the mixture finally escapes through the floor openings into the foul-air ducts leading to the ventilating chimney, or by the ceiling ventilators into the atmosphere. It is a constant process of dilution of foul air by pure air, to which the diffusive property of gases lends aid, and the steady removal of the mixture. This dilution is the great principle of ventilation; foul air can seldom be displaced in mass. The quantity and direction of air coming into the ward are controlled at each register.

The following table shows the amount of air for winter ventilation entering the ward each second and each hour for each of the sixteen beds:

VENTILATION IN WINTER MEASURED BY CASELLA'S AIR-METER.

Date.	Cubic Feet of Air for			Temperature.			Observations.
	Each of 10 registers, per min.	Each of 16 beds, per sec.	Each of 16 beds, per hour.	Ward register.	Ward.	External.	
1893, Jan. 26	201	2.1	7,500	116°	68°	16°	Eight.
1894, Feb. 6	229	2.3	8,200	103	69	16	Five.
Feb. 7	185	1.9	6,800	116	70	..	Four.
Feb. 12	213	2.2	7,900	112	71	28	Five.
Feb. 12	225	2.4	8,600	110	71	..	Nine.
Feb. 12	218	2.26	8,100	..	71	..	Five.
Feb. 19	193	2.	7,200	112	69	46	
Feb. 22	267	2.8	10,000	109	68 71	22	
Feb. 24	255	2.6	9,100	109	64	12*	
Feb. 26	221	2.3	8,200	120 118	68	23	
Mar. 26	250	2.5	9,000	110	..	32	
Mar. 26	180	1.8	6,500	..	..	32	

* At 2 P. M.; 7° at sunrise.

The air is measured by a Casella's air-meter at the register, reduced, for convenience, to a square foot, care being taken to get the average velocity by measurement in different parts of the current, and taking care that the air which has passed the instrument has a free escape.

The first column shows the cubic feet in one minute as actually observed at each of the ten registers, the second column the cubic feet in one second, and the third the quantity distributed to the whole ward of sixteen beds in one hour. The observations were made in January and February, 1894.

The extremes in the last column were 6,940 and 9,562. These variations are not greater than may be expected in observations of this kind; they are due in part, perhaps, to the observations, but principally to changes in the force of the wind and the arrangement of the windows of the air-chamber; 9,562 was observed during a brisk wind, the other observations were made on calm days. The "flushings of the wards" to be described further on are not included in this table.

In the above table the air entering through the registers has alone been measured. No reference is had to that coming by other ways, around doors and windows and the innumerable cracks and crevices. This is much greater than is generally supposed. In a room warmed by a hot-air furnace, with an outside temperature of 33° F. and the incoming air at 108° to 129°, it was found that with the greatest care in stopping all cracks and crevices about windows, doors and keyholes, oiling and painting the woodwork and plastering, the air entering by the register was diminished but 20 per cent.[3] Assuming the same state of things at this hospital — and, under the inward pressure caused by the ventilating chimney, it can hardly be less — the total amount of air entering the wards was 20 per cent. greater than that measured at the register.

The permeability to air of our plastered ceilings is well seen in a room where there has been smoke; the dark streaks show that the smoky particles have been strained out; the lighter color is where the furrings above have obstructed this outward movement.

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[2] Viollet-le-Duc's Architecture: Latrines.

[3] Mr. J. Pickering Putnam: The Open Fireplace.

Pettenkofer, from his own observations on the porosity of building materials, finds the amount of ventilation through the walls of his room of 2,648 cubic feet, for a difference of temperature of 18° F. between the inside and outside, to be at the rate of 8.65 cubic feet each hour for 10.85 square feet of wall surface. Many experiments have been made on the porosity of the walls of stone buildings, with the result that they are more porous to air than is generally supposed.

The ventilation here indicated in our table appears large when compared with that generally given in hospitals. Those recently built have been much more liberally supplied with air than formerly, but the improvement in this respect has been slow. Until thirty years ago it was thought that about 1,000 cubic feet an hour for each bed was sufficient. In 1860 Lariboisière Hospital in Paris was built, its plan — the pavilion plan, as it is called — has been followed in the construction of this and most of the best hospitals. An investigation made at that time showed that a ventilation of 2,480 cubic feet an hour for each bed did not always prevent a disagreeable organic odor in the wards. It was afterwards assumed that for hospitals in general 2,840 feet an hour was sufficient, and for wounded and surgical cases 3,550 feet. Dr. J. S. Billings, in his excellent and exhaustive treatise on ventilation, recommends 3,600 feet an hour — one foot a second.

At Johns Hopkins Hospital, from Dr. A. C. Abbot's report, it appears "that during those months in which the occupants of the wards are in the main dependent upon the register for their fresh-air supply, each individual receives at least one cubic foot of fresh air per second, and usually a little more."[4]

In inquiries of this kind it has been assumed that four per cent. of the expired air is carbonic acid, and that the percentage of the same gas found in the ward over and above that normally belonging to the open air is an index of impurity; not that this amount of carbonic acid found in hospitals is necessarily unhealthy, it is used merely as an index of the organic impurities generally thrown off from human beings, which cannot be properly estimated by chemical methods.

The results obtained by different observers, however, are by no means identical. Of some of the conditions of the air in the wards carbonic acid can be no indication, such as the relative humidity, the dust, the number of bacteria and some of the products of combustion. It can only be a measure of those impurities that produce carbonic acid. After all, this question belongs not so much to chemistry as to physiology and inasmuch as it relates to the sick, to pathology also. It must be remembered that a deficient or vitiated air-supply may act very differently upon the sick and debilitated than upon those who make investigations on this subject in chemical laboratories.

It has seemed, therefore, better to attempt the solution of this very important question by studying, in our wards, the condition of the sick with a much larger air-supply than is commonly given. The construction of the Cambridge Hospital is such that it is possible to do this with a reasonable hope of success.

In determining the proper quantity of air, care has been taken not only to meet all the requirements as to temperature, the only respect in which it differs from outside air, and its character as measured by carbonic acid, but an attempt has been made to go further and give that quantity of air, whatever that may be, that experience shows is required for the comfort of the sick and the prevention of all organic odor. It is not asserted that this desirable point has at all times been reached; in some instances it has not, and yet while some of our best hospitals have deemed less than one and a half cubic feet a second sufficient, it has been found in Cambridge Hospital, that to attain the degree of purity indicated by the entire absence of all animal odor, two feet a second, at least, for each bed has been required, and something more than this has been aimed at and generally given.

The movement of the air about us, and it is never still, the natural ventilation, as it is called, is much greater than is generally supposed.

Faraday's experiments show that at two feet a second (Pettenkofer says at one metre a second) we first begin to feel the air as a moving body. At one-half or one-third of a metre a second we consider it a perfect calm; our senses are not delicate enough to recognize it, and yet air at that velocity would move from end to end of the Cambridge wards in thirty seconds, and across them in half that time quite unnoticed by us.

Taking Pettenkofer's illustration: Suppose a frame of the size of a man, six feet by eighteen inches, nine square feet. Now, with this inappreciable velocity of two feet a second, 18 cubic feet would pass through this space in one second, or 1,000 cubic feet a minute; to this 1,728,000 cubic inches a man would add by respiration in the same time but 14.4 cubic inches of carbonic acid or one part in 120,000. This measures, under these conditions, the rate of nature's method of diluting the carbonic acid produced by respirations.

(To be continued.)

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THE MODIFIED MILK QUESTION.

BY A. WORCESTER, A.M., M.D., WALTHAM, MASS.

THE best way of feeding infants deprived of breast milk is an especially interesting midsummer question. Without professing to have found out all about it, I have lately had opportunity for studying the remarkable work that has been done in Dresden in preparing a perfect substitute for breast milk. For this I am under the greatest obligations to Prof. Dr. W. Hempel and to Dr. W. Hesse, who most generously gave me every facility for studying the processes there employed. As I am firmly of the opinion that these are superior to the lately patented Walker-Gordon processes of modifying cows' milk, I take great pleasure in telling others how practicable it is to avoid inferior, although patented, milk-modifications.

The superiority of the Dresden modification rests mainly upon the recognition of an essential difference between casein and lact-albumin. Professor Lehmann's analyses[1] of breast milk and cows' milk show that while cows' milk is more than twice as rich in casein, it is much poorer than human milk in lact-albumin, as may be seen in the following tables:

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[4] Johns Hopkins Hospital Bulletin, September, 1891, p. 131.

[1] Posthumously published, as the results of ten years spent in this investigation, under the editorship of his friend, Prof. Dr. W. Hemel.

	Cows' Milk.	Human Milk.
Casein	3.0%	1.2%
Albumin	0.3	0.5
Fat	3.5	3.8
Sugar	4.5	6.
Ash	0.7	0.2
Water	88.	88.5
	100.	100.

If, therefore, cows' milk be diluted with water sufficiently to reduce the casein of the mixture to the amount found in human milk, the mixture will contain only one-third enough lact-albumin.

Furthermore, if the milk be sterilized, still further loss is occasioned, as the coagulated albumin is wasted in the scum and by clinging to the sides of the bottle.

Does not this account for many of the failures of the sterilized milk mixtures? And can we afford to decry the use of the patented grain foods, which furnish vegetable albumin, unless in some still better way we furnish this needed constituent of every food?

We know the disadvantages of too much casein. We rightly dread the cheese curds in the dejections, for such undigested lumps not only show that the infant has not received the needed albuminous nourishment but has had its intestine irritated by these foreign masses. But if we dilute the cows' milk sufficiently to avoid these cheese curds, we shall be starving the baby, unless we add some soluble albumin.

Three forms of soluble albumin are available: peptonized grain albumin, meat juice, and the white of egg. The last is undoubtedly the best, because of closest resemblance to lact-albumin, and of easiest obtainment.

The white of one egg added to one pint of cows' milk and one-and-a-half pints of water will supply the proper amount of soluble and digestible albumin. Of course, we must also take care that the mixture contains the proper amounts of fat and sugar. These requirements can be met by using milk of 9½ per cent. richness in fat, and by adding 13 drachms of milk-sugar to the mixture.

This, in brief, is the Dresden mixture, which most closely resembles human milk, and here as well as there is now giving the greatest satisfaction. Moreover, it is not patented. And the men who have spent years in developing the processes of manufacture would scorn the idea of so withholding its benefits for their own pecuniary gain.

It must be admitted at the outset that it is not so easy as it sounds to make this mixture, but the difficulties are by no means insuperable. In the first place it is astonishing how ignorant we are of the amounts of fat (cream) in different milks. Nobody can trust to guessing, for some relatively poor milks look to be rich in cream. The real amount can be discovered only by centrifuging a sample, although the cheap lactometer gives a fairly accurate measurement.[2]

Once having secured a milk of requisite richness, by taking a certain amount from the top of the can that has stood on ice a certain length of time, or by adding to the milk as it comes a certain amount of cream of ascertained richness, it is not difficult by reproducing these conditions to obtain a milk fairly near to the desired standard.

At least during the summer months, and always where the source of supply is not known to be unquestionable, it is probably better to sterilize the milk before adding the other ingredients in the mixture.

It is needless to say that a fresh egg is better than a stale one. But it may further be added that the egg's freshness will at least partly compensate for the *deadness* of sterilized milk, and so prevent scurvy — which is certainly becoming more prevalent hereabouts in children fed wholly on sterilized milk. The milk-sugar ought also to be sterilized, in a sealed jar, if we wish to make a mixture that will keep good for months, as the Dresden mixture does. Then it is, of course, necessary that the vessels used, and the strainers, and the cover-cloths be also sterilized. The hands of the manufacturer must be absolutely clean.

When all these preparations have been made (and it is easy to teach any intelligent nurse or mother these needed steps), the first thing is to wash an egg, to rinse it in absolute alcohol, and to break it over a bowl or mortar, allowing only the white to drop in. The 13 drachms (52 grammes) of milk-sugar is then to be slowly added and vigorously stirred with the egg-white, taking care not to beat air into the mixture, for egg foam will not mix well with water. To the paste so made a pint and a half of water is slowly added, stirring constantly. This emulsion is then strained through fine linen into the sterilized milk, which has also been previously cooled down below 100° F. Slight stirring or shaking will now complete the mixture, when it may be poured into the required number of nursing bottles. These, stoppered with sterilized cotton, can then be kept cool, and warmed as needed.

If sufficient care is taken in preparation, the mixture will keep for days, and even for months.

It is a common mistake to add lime-water or soda to modified cows' milk. Although to litmus cows' milk appears to be acid, it really is not so. The litmus-test is deceptive in estimating the acidity or alkalinity of phosphate solutions. And lime-water added to an infant's food overtaxes the stomach by wasting just so much gastric juice as is needed to offset the alkali. If the infant's digestion is weak, it is well to aid and not to hinder it. Dilute hydrochloric acid added to the milk mixture is right in theory and of marvellous advantage in actual practice.

Again, as regards the custom of increasing the richness of the infant's food, or of prescribing different qualities for different ages, it needs only be said that it is as nonsensical as to prescribe increasingly richer beef and bread and potatoes for children as their years increase. A mother's breast milk increases in quantity as her baby's stomach grows larger; but there is certainly no such change in its quality as the intricate tables of our text-books would lead us to believe. And this leads me further to remark upon the intricacy of the subject of infant feeding as commonly presented. Were there any agreement among our authorities, there might be some hope for the practitioner of average intellect; but even so he ought to take several years' instruction in all the arts and sciences before attempting to grapple with "modified milk." Small wonder it is that the babies stickle at sucking it in! For my part, I confess having in the past pinned my faith in turn upon the captivatingly plain statements which sleek agents have left with their blotters and pencils and lovely paper-weights. I have also starved many a baby with the samples of patent foods so left in my hands. My successive mortifications, however, never climaxed until I learned of a patent just issued upon the Boston process of separating cows' milk into its various parts and then combining them again. But I trust that physicians will not be intimidated from combining cream and milk-sugar and cows' milk in imitation of breast milk. I also hope that the addition of egg-white may come into general use.

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[2] H. I. Johnson, druggist, Waltham, Mass., can furnish a good lactometer and other needful apparatus for estimating the amount of fat in milk.

Rules for Imitating Breast Milk.

Rule I. To one pint of cows' milk (of nine and one-half per cent. fat), add one and one-half pints of an emulsion of one egg-white and 13 drachms milk-sugar in water.

Rule II. Avoid all patented mixtures and processes.

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Clinical Department.

BRIEF NOTES OF A THOUSAND CASES IN OBSTETRIC PRACTICE, EXTENDING OVER A NUMBER OF YEARS.

BY JAMES VENABLES, M.D. (HARV. 1867), HALIFAX, N. S.

Number of cases		1,000
Number of abortions		47
Number of premature births		36
Number of males (maturity)	484	
Number of females (maturity)	383 —	867
Case of uterine hydatids		1
Case of tubal pregnancy		1
Cases moved away before confinement, or attended by others		60
Total, cases and births,		1,012

There occurred in the above: primipara 179, twin cases (maturity) 12, placenta previa 4, convulsions 3, forceps cases 41, still-born (maturity) 59, acephalous 1.

Presentations: face 3, breech 15, footling 6, left arm 1, right arm 1. natural 841. Total, 867.

Cases occurring in each month: January 81, February 67, March 79, April 68, May 93, June 85, July 87, August 79, September 79, October 68, November 60, December 89, not known 65. Total, 1,000.

In the foregoing it will be observed that there were 41 cases in which forceps were used, in a total number of 867 cases; in 10 of these cases the child was still-born; in the other cases both mother and child did well, troublesome laceration of the perineum occurring in one case requiring surgical attendance for some time. Churchill states that about one forceps case occurs in 249, among British practitioners; one in 140, among French; and one in 106, among German. "If we add the whole number together, we find 8,007 forceps cases in 850,713 cases of labor, or about one in 106⅓."

It will at once be seen that the foregoing shows a greater number of forceps cases — one in 21 — than either the British, French or German statistics. The number of children born dead — forceps cases — is about one in five, says "Churchill's Midwifery."

Three cases of convulsions occurred during labor. One case terminated without the use of forceps — both mother and child did well; in the other two cases forceps were used — the mother did well in both cases, the child was still-born in one case.

In the four cases of placenta previa, three of the children were still-born; in the other case both mother and child did well. In one case (the patient lived out of the city and I made her but one visit) there had been hemorrhage at intervals from January 1st till February 8th, the date of my visit; the patient died soon after delivery. In another case the mother did well (child still-born); and in the fourth case the mother did well (child still-born). Or, death of the mother in one case, and of the child in three cases, out of four.

It will also be observed that 15 breech cases occurred in a total of 867 cases, or about 1 in 57½.

"Churchill's Midwifery" says: "Thus in British practice, breech presentation occurred 1,363 times in 91,651 cases, or about 1 in 67⅓; in French practice, 1,169 times in 50,873 cases, or about 1 in 42¾; and in German practice, 793 times in 54,794 cases, or about one in 66½; the entire number of breech presentations being 3,325 in 197,318 cases, or about one in 59⅓."

The number of still-born was 59. There were also 14 premature still-born. In the 59 cases still-born two were breech presentations, two footling, one left arm; three of them were placenta-previa cases. In 10 cases the forceps were used.

In one case of natural labor I used an ointment of cocaine, with lanoline and glycerine, applied to the os and vaginal cavity, without, as far as I could observe, any marked effect. Chloroform was requested by the patient, but the labor did not wait for it and perhaps (?) the cocaine hastened matters so that there was no time to use the anesthetic.

In one case, still-born, there was degeneration of the umbilical cord, and the limbs of the child were quite rigid.

Hare-lip occurred in one child, which died an hour after it was born. Opacity of the cornea (in one eye) was present in one child.

In the case of tubal pregnancy the patient was twenty-nine years of age, and had borne other children. A post-mortem examination showed total ulceration of the bowels, and cavity filled with fecal matter, from which the bones of the fetus were removed. I regret that my notes of this case merely allow the mention of it.

In the acephalous case the following was published in the *Maritime Medical News*, Halifax, N. S., December, 1891, under the title "Note Concerning a Monstrosity — An Acephalous Fetus."

I was summoned to attend Mrs. —— in labor, in the summer of 1890. On my arrival she told me that there had been quite a quantity of water escaping, and the symptoms of labor had manifested themselves early in the morning. I at once made an examination *per vaginam*, and found that the membranes had been ruptured, and that the presentation was one of the inferior extremities. The pains increased. The left foot soon came down and, at the same time, a portion of the umbilical cord, which was without pulsation. A few more pains brought down the right foot and the body of the child; and to my astonishment, another pain expelled the entire fetus. The uterus soon contracted firmly, and without any traction, the placenta came away in about ten minutes; the entire labor terminating in about five hours after my arrival. The placenta was normal, and there was no post-partum hemorrhage of a serious nature. The patient, a woman forty-one years of age, made a rapid recovery. She had previously had one premature birth, and six abortions. She had also had six living children. Her health has always been good.

The fetus was a female — its body and lower limbs well-formed and plump. I did not weigh it, but am inclined to think it would weigh fully nine pounds and be about twenty-four inches in length. There was nothing unusual about the appearance of the fetus until you reached the upper part. Here the face had a depressed appearance and the ears were not fully developed. The calvarium was entirely absent, and with the termination of the spinal column the development ceased. The skin covered a reddish pulpy mass, having a slight resemblance to brain. The frontal bone was rudimentary and thrown well back.

Monstrosities are of two kinds: there may be either a *deficiency* or an *excess* of some portion of the body. It has been said that many other forms of monstrosities are explained upon the principle of retarded development, and that those parts which are the last completed present the greater number of deviations from the ordinary or natural rules. Among the ancients, monstrosities were considered as mere experiments on the part of atoms to produce some other species or race.

In the case of uterine hydatids an examination at once revealed a softened condition of the os and cervix, and on dilatation was followed by an escape of cysts. Subsequent use of ergot, and increased uterine action, with manual assistance, brought everything away. There was but little hemorrhage. A compress and bandage was applied; and under tonic treatment a good recovery soon ensued.

In very few of the foregoing cases have I used either chloroform, ether or stimulants; and in those few but little has been required. After leaving the patient I have trusted to the efforts of a good nurse (you don't always have *good* nurses, though) — a woman with common-sense, to maintain peace and quietness in the sick-room, and to carry out any instructions she might receive, always endeavoring to help nature, whose teachings are often disregarded.

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Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D.

MILIUM CONGENITALE (EN PLAQUES).

DR. RADCLIFFE CROCKER relates two cases which he calls by the above name, with accompanying portrait and drawings, in the *International Atlas of Rare Skin Diseases*, No. X.

The first case was seen by him in 1879. The subject was a boy, six weeks of age, whose health had been good from birth with the exception of occasional vomiting. There was no family history of significance. The face and scalp were occupied by congenital lesions distributed in irregular patches on the face, neck and scalp, the largest of which upon the occiput, measured 9¾ by 2⅜ inches. The skin in other parts was perfectly normal. In color the patches were reddish-yellow; deeper when the child cried, and paler after exposure to cold. They were made up of very small yellow papules, closely grouped, and the whole patch was slightly raised. At the edge, which was sharply bounded and more elevated than the rest, were numerous comedones with black tops. These patches were present at birth, more raised than later on, and had been gradually fading ever since although their area remained unaltered. The case was shown at the Clinical Society, and as there had been slight snuffling, mercurial ointment was rubbed into the trunk for a month, but without result. The child continued to be troubled with vomiting; there was progressive emaciation; and he died four months after he was first seen.

A committee to whom the case was referred for investigation reported that the disease was congenital; that there had been no alteration in the extent of the lesion after birth; that the color varied according to the vascularity of the part, this in turn depending on heat, excitement, etc., and that some of the sebaceous glands became filled with secretion and afterwards inflamed like an ordinary acne. They thought also that the snuffling, an eruption that had appeared upon the buttocks, and the progressive wasting suggested congenital syphilis strongly, but that the disease was unlike any known syphilitic lesion.

A portion of skin was excised post-mortem, and showed, on section, no material change in the epithelial layers, although the papillæ were less prominent than in the healthy part. The fibrous tissue of the corium was much increased in the deeper portions, moderately so in the upper, where the sebaceous glands were conspicuous, and on the whole, abnormally large. The hair follicles were in most sections absent, and there were few sweat glands or ducts. It was considered that these results indicated a preceding inflammation; and the committee's report was "that an intra-uterine inflammation had led to an increase of fibrous tissue which by its contraction pressed upon and atrophied the hair bulbs and sweat glands, and partially separated the component parts of the sebaceous glands."

In 1890 Crocker saw another case, where a girl of three months had a patch on the left cheek just in front of the ear, corresponding in its position to a portion of the much larger patch on the left cheek of the first case. In this case the condition was congenital also. No suspicion of hereditary syphilis could be detected in the case, and there was no family history of importance. Crocker re-examined the lesions in the light of Robinson's observations on milium, and came to the conclusion that the structures called sebaceous glands twelve years ago, are identical with the milium which Robinson thinks is derived from miscarried embryonic epithelium. He considers finally that the clinical and microscopical evidence tend to prove that there had been a deep-seated intra-uterine inflammation, or chorionitis fetalis, which produced an increase of fibrous tissue and an atrophy of the glandular structures of the skin, leaving only the milium-like bodies to represent them; hence this title, Milium Congenitale, is a proper one.

ERUPTIONS CAUSED BY ANTITOXIN.

Asch[1] relates the case of an infant of twenty-seven months, who was the subject of a mild case of diphtheria. Three days after the first injection of antitoxin, there was an outbreak of urticaria at the site of the injection, on the left thigh. The following day the diphtheritic deposit had diminished and the general condition was good; upon the flexor surfaces of the thighs, there was a confluent urticarial eruption, as large as the palm of the hand, occupying the site of the injection, which later spread over the whole flexor surface. On the right forearm there had appeared a punctate scarlatiniform eruption. The eruption soon began to desquamate and rapidly disappeared, an erythematous condition of the face and of the left side of the neck showing itself intercurrently. Soon after, although the child was cured of the diphtheria, transient erythematous patches made their appearance on different portions of the body. Finally there occurred a deep red, almost universal erythema, which had all the characteristics of erythema multiforme, accompanied by a pain and tumefaction in the right tibio-tarsal articulation, and a rise of temperature, which persisted for some days.

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[1] Berl. klin. Woch., 1894.

Lublinski[2] observed a multiform exanthem appear in a child of eight years, after three injections of serum, together with serious general symptoms. Ten days after the last injection there appeared an erythema of the tibio-tarsal articulations of both feet, and on the following day an eruption closely resembling measles, which invaded first the extensor surfaces of the extremities. There followed a slight elevation of the temperature, pains in the knee-joints, elbows and feet, without swelling, and an extension of the eruption to the trunk. On the following days the temperature went still higher, the general condition was alarming, and the eruption invaded the face. A good recovery was entered upon a few days later.

Scholz[3] gave to his son, a boy of ten years, an injection of antitoxin on the third day of a diphtheria, and to his daughter of six, an injection at the same time, with the aim of immunization. The little girl contracted the disease three days later despite the attempt at prophylaxis. In both cases ten days after the injection, there appeared an eruption of erythema multiforme, accompanied, in the case of the boy, by severe pains in most of the joints, in the muscles of the trunk, and especially in the popliteal spaces. The eruption was accompanied by great pruritus, was of an urticarial character, and attacked primarily the dorsal surface of the hands and feet, later the arms and legs; after some hours it had extended to the internal aspect of the thighs in the form of plaques of the size of the palm of the hand. In the case of the little girl there were reddish-blue plaques upon the dorsal surface of the hands and feet, which disappeared in a few days, but there were no pains in the joints. The eruption and joint pains disappeared in the boy at the end of three days.

At a meeting of the Dermatological Society of Great Britain and Ireland, Dr. Walsh commenting on the occurrence of a rash after antitoxin injections, suggested that these eruptions might be due to the vicarious elimination by the skin of an irritant circulating in the blood, as in the rashes that have followed the use of tuberculin also. Dr. Pye-Smith said that he had observed an erythematous eruption three or four times after the use of antitoxin. It was not the immediate effect of the puncture, as it appears in distant parts and has the form of a roseola with sharp margins, and without papules, vesicles or pustules. It fades after twenty-four hours, and lasts but a few days. He considers that its analogy to the eruptions in scarlet fever and measles is evidence that these also are due to the circulation of chemical poisons. It is very closely allied to the erythemata produced by eating mussels, and some other kinds of food. Dr. Mackey believed that in many instances these rashes were due to overdoses.

LOCAL ANESTHESIA IN DERMATOLOGY.

At the meeting of the Societé de Dermatologie et de Syphiligraphie, of April 18, 1895, M. Dubreuilh[5] in a paper on the above subject, declared that local anesthesia by means of cocaine had been very little adopted in actual practice. It is only in ophthalmology, laryngology and rhinology that it is habitually used; dentists make use of it only occasionally, dermatologists almost never. In laryngology and rhinology its use is much simplified by the fact that anesthesia is obtained by a topical application and strong solutions, from five to ten per cent. may be used with very rare accidents.

Almost any dermatological operation may be done by the use of cocaine. In some quite exceptional cases it may be used as an application to ulcerated surfaces, in a solution as strong as ten per cent.; but the anesthesia is always very superficial in character and this method is only of use to mitigate the pain of a strong application or of a cauterization by nitrate of silver. It is not sufficient for curetting. Ointments or solutions of cocaine applied to the sound skin are of no value, and the same may be said of cataphoresis that has been so much vaunted.

The only practical method of anesthesia by cocaine is by interstitial injection. As the cocaine comes into direct contact with the ends of the nerve filaments, weak solutions are sufficient and almost all that is injected will be absorbed. Two important principles in the technique may be laid down: (1) The most sensitive portion of the corium is its upper part. (2) The solution should permeate the tissues that are to be anesthetized, in order to reach the nerve terminations. Hence the injection should be intradermic and not subcutaneous. A two-per-cent solution of cocaine in equal parts of distilled water and cherry laurel water is recommended, and two cubic centimetres is rarely exceeded. Needles bent at an angle of 45° are employed, so that by advancing the point a few-drops may be injected into different parts of the skin, without withdrawal. A certain sense of resistance is a favorable sign, for it shows that the injection has been properly made. A white anemic zone arises at the point of the needle, caused by a compression of the vessels by the liquid injected. The anesthesia is immediate and lasts from fifteen to twenty minutes. In certain places it is better to employ a straight needle, and proceed by multiple punctures, as on the alæ of the nose, the fingers and the nostrils. In places where the skin is very thin, as on the front of the neck, the eyelids or prepuce, an intradermic injection is almost impossible, but a hypodermic is quite effective. Certain individuals are more or less refractory to cocaine, especially women. The anesthesia is due to the cocaine and not to the simple imbibition of the skin with water, as stronger solutions often succeed where weaker ones fail. Dubreuilh has never seen the slightest accident from cocaine thus used. He does not, however, exceed four or six centigrammes. He considers this the best method for local anesthesia in dermatology. It is only in very short operations on inflamed tissues, as in opening an abscess, that freezing is to be preferred.

In discussing this communication, Dr. Besnier remarked that the question of local anesthesia at a large clinic was a very difficult one to decide. Only a small amount of time can be given to each patient, and cocaine is very slow in its action, requiring a wait of at least five or ten minutes. Moreover, cocaine is not indicated in all cases, especially when there are large surfaces to be operated on. He thinks that chloride of methyl ought not to be abandoned, as it is of great value in cases of small superficial epithelioma, tuberculosis verrucosa, etc.

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[2] Deutsch. med. Woch., 1894, No. 45.
[3] Loc. cit., 1894, No. 46.
[5] Annales de Derm. et de Syph., April, 1895.

DERMATO-NEUROSES AND THEIR TREATMENT.

Leloir[6] the accomplished advocate of the nervous origin of many dermatoses, whose place has not been accurately defined by the majority of dermatologists, calls attention to the importance that he has placed, since 1886, in pruritus as a forerunner of the dermato-neuroses. He had declared that pruritus and other nervous manifestations preceded the eruptions, and were frequently their cause. Besnier, Brocq and Jacquet followed later in this same path, Jacquet and Brocq declaring that pruritus was the cause of the eruptions.

Dermato-neuroses are defined as those cutaneous affections which are dependent on a lesion in the central ganglionic, or peripheral nervous system. Leloir divides them into

(1) The purely sensory dermato-neuroses, or those which exhibit as sole symptom, derangement of the sensory functions of the skin. These include (*a*) the different forms of hyperesthesia of the skin, especially pruritus, and (*b*) the different kinds of anesthesia of the skin.

(2) The purely motor dermato-neuroses, which are characterized by a single phenomenon, the contraction of the muscle fibres, as is especially seen in cutis anserina.

(3) The pure angio- or vaso-motor neuroses. Although often associated with tropho-neuroses, they are distinct from the latter forms, and Leloir regards it as established that the vaso-motor disturbances caused by affections of the nervous system are not sufficient in themselves to give rise to true trophic affections. This class comprises certain hyperemias and erythemas, certain anemias, urticaria, certain cutaneous hemorrhages, etc.

(4) The tropho-neuroses of the skin. This class he considered as one of the most important. It comprises a large number of active and tedious cutaneous affections, of which the manifestations are very varied. In this class he includes, among many other affections, certain papular and vesicular eczemas, zöster and certain forms of herpes, and of pemphigus, some pustular and ulcerated forms, some forms of ichthyosis and of sclerema, disturbances in the pigmentation of the skin, etc.

(5) The glandular dermato-neuroses. These are characterized by a disturbance in the secretion of the gland, in consequence of a functional disturbance in the nervous system. They include, hyperidrosis, perhaps certain forms of acne rosacea, certain forms of alopecia and of cavities, neuroses of the nail-bed, etc.

With regard to the therapeutics of the dermato-neuroses, Leloir confesses at the outset that rubbing and scratching of the skin, and contact with the outer air and with irritants must be avoided, as in other dermatoses. He uses pastes and ointments spread thickly upon linen, and covered with cotton, also the various preparations of gelatine, plasters and varnishes. In dermato-neuroses accompanied by severe itching, he has often obtained good results from scarification, after the manner of Vidal. In other cases, accompanied by more or less localized edema of the skin, especially in certain eczemas of the hands and fingers, the application of astringent substances, as alcohol, ergotin, ichthyol in alcoholic solution, have proved of value. Luke-warm douches along the spine were found to be useful, and, especially in the case of trophic ulcers, the galvanic current. This method has been advocated in various other affections also, as in elephantiasis and morphea and vitiligo. Leloir has cured several cases of pruritus of the skin, and of vulvar pruritus which had defied all medication, by means of electrolysis; yet he hastens to remark that it is a very painful procedure, which can be used only in very localized forms. Faradization he has given up. Static electricity was used in a number of cases, which had proved obstinate, and with good results. These were cases of general pruritus as well as vulvar and anal forms. In other cases no benefit was derived from it. A large number of cases of dermato-neuroses, as eczema, lichen, urticaria, morphea, vitiligo, asphyxia of the extremities, trophic ulcers, alopecia areata, etc., were also treated by static electricity, but the results were varied.

Internally, Leloir speaks well of quinine, strychnia, bromo-camphor, hyoscyamine, etc. Arsenic is often of service, as are the hypophosphites. The neurasthenia that accompanies so often the dermato-neuroses, must be treated appropriately, and attention paid to the functions of the kidneys and liver, and to affections of the digestive tract.

He considers that a nervous lesion may often be diagnosticated by the appearance of a skin affection, when the former would have remained unperceived without the latter. These eruptions he has named Dermato-neuroses Indicatrices.

ELEIDIN IN NORMAL AND PATHOLOGICAL SKIN.

Dreysel and Oppler,[7] working in Jadassohn's clinic in Breslau, have studied the question of eleidin, the substance discovered by Ranvier, and which Buzzi differentiated from Waldeyer's kerato-hyalin.

The writers' procedure was to harden pieces of skin of medium size in absolute alcohol for from two to three days, as a longer hardening did not give such good results, and imbed them in colloidion. In cutting with the microtome they found it important that the sections should be dry, the knife not moistened. The sections may or may not be stained on the slide, and picro-carmine was the most valuable stain. A solution of nigrosin in water, as used by Buzzi, also proved of service.

The consistency of the eleidin was found the same as described by various authors — the drops became confluent under pressure on the cover-slip, and changed their form. Thus eleidin is a fluid, and lies in the stratum lucidum. Ranvier regards it as an essential oil, Buzzi as a fatty oil, a glycerine fat. The writers found that in the sections that were kept in distilled water, dilute or absolute alcohol, the eleidin had disappeared after a few hours. For this reason they adopted the procedure of cutting the sections dry.

All observers are agreed in localizing the eleidin in the upper and lower surface of the section, at the level of the stratum lucidum. The writers, like Buzzi, were able to demonstrate the eleidin, often in very considerable quantities, in the course of the ducts of the sweat glands, through the stratum corneum. It was also found between the inner and outer root-sheath.

It is especially insisted upon that eleidin and kerato-hyalin are two totally different substances, although they have certain properties of staining in common. Their relation to one another is not well understood, and we can only say that they are both concerned in the process of cornification. Eleidin was found on all parts of the skin that were examined. Contrary to Unna, it was demonstrated on the junction of skin and mucous membrane of the lips.

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[6] Archiv. f. Derm. u. Syph., 1894.

[7] Archiv. für. Derm. u. Syph., 1895.

With regard to the presence of eleidin in pathological conditions, it has been found by other investigators to be increased in warts, prurigo nodules, chronic dermatitis, etc. The writers examined a number of cases of cutaneous affections and found in a case of roseola syphilitica, of erythema multiforme, and in an acute eczema that the eleidin and kerato-hyalin were present in normal amount. The same was true of a chronic eczema, while in two cases of dry circumscribed psoriasiform eczema, both eleidin and kerato-hyalin were much diminished. The same was true in several cases of psoriasis. In papular and pustular syphilides the eleidin was diminished at the edge of the lesions, and entirely absent in the centre, the kerato-hyalin also. In tuberculosis verrucosa cutis and in scrofuloderma the eleidin was less abundant than normally. In an impetigo pustule the eleidin was present in normal quantity.

In affections attended by little or no inflammation, but characterized chiefly by scaling, as pityriasis capitis, pityriasis tabescentium, pityriasis versicolor, no alteration in the amount of eleidin was found. In verruca acuminata, where there were nucleated horny cells, the eleidin was completely wanting, and the kerato-hyalin almost completely. In verruca dura they were both increased. In molluscum contagiosum, the molluscum bodies, intensely stained with picro-carmine, were found to be surrounded by a dense network of typically stained drops of eleidin in great profusion. In a case of clavus that was examined, eleidin and kerato-hyalin were found totally wanting in the centre, where the papillary body had completely disappeared; but at the periphery, where the rete was hypertrophied, they were both increased.

In general, the writers find that eleidin is present in the stratum lucidum wherever the cornification is complete, that is, where the upper horny layers exhibit no nuclei capable of staining. The more vigorous the production of horny cells, the greater the quantity of eleidin. In all places where the process of cornification is incomplete, the eleidin disappears almost wholly. Thus on the mucous membranes, which exhibit stained nuclei in the upper layers and on the labia minora and on the prepuce, there is little or no eleidin produced. In all sorts of pathological processes where there are anomalies of cornification — parakeratoses — the same is true. The amount of eleidin in the epidermis is not always proportional to that of kerato-hyalin.

CAMPHORATED SALOL.[8]

This is prepared by moistening one part of camphor with a few drops of alcohol, and rubbing this in a porcelain mortar with 1.4 parts of salol, until a transparent fluid is obtained. Elsenberg has used this preparation in various cutaneous affections for two years, but has found it of especial value in furuncles and carbuncles. A change takes place in from twelve to twenty-four hours; the pain diminishes, the redness and inflammation of the adjoining parts disappears; and the tumor becomes progressively smaller, without the formation of pus. As a rule, the secretion obtained from the vesicle at the point of the furuncle yields a pure culture of the staphylococcus aureus on nutrient media, as do also bits of the infiltrated tissue. After camphorated salol has been used for twenty-four hours, no such cultures can be obtained. When suppuration has already taken place in a furuncle, and after the slough has been removed, the pain and hyperemia may be much lessened by the application of the camphorated salol, and the suppuration diminished. The healing process then advances quickly, a slight discoloration, and some infiltration only being felt for a short time. The method of using the drug, is to lay bare the point of the furuncle, or in the case of carbuncle to make several moderately deep incisions, in order to facilitate penetration into the infiltration; afterward the lesion and the surrounding hyperemic parts are covered with cotton compresses soaked in camphorated salol, and an impermeable covering placed outside.

ERYTHROMELALGIA.

Gerhardt[9] reports the case of a woman, forty-four years of age, who had never been strong, and had suffered especially from palpitation and fainting fits. Suddenly the patient was seized in the night with intense pain in the hands and feet, which still continued when the case was reported. At the same time with the pains there appeared an intense redness of the fingers and toes, with the exception of the left thumb. There was great sensitiveness to the touch. Arsenic was employed, with rest and protection of the parts; and some improvement was noted, when suddenly she experienced a fresh attack of pain. Antipyrine had a marked effect upon the pain, and there was great improvement until a third attack was experienced, associated this time with pain in the tongue and a disturbance of the speech. There was a marked thickening of the skin at the edge of the nail. The nutrition was poor. The sensibility of the affected parts was somewhat impaired, and there was an increase in the sweat secretion.

This affection was first described by Weir Mitchell in 1878 under the name erythromelalgia. This writer records six cases of his own and five from other sources. Lannois collected 24 cases, which were mostly in men, and which proved very obstinate, and rebellious to treatment. The lower extremities are affected in the majority of cases. The characteristic symptoms are pain and redness of the extremities, beginning at their distal end.

Another case of the same affection was reported by Senator at the same meeting of the Charité staff, where the patient, a man forty-four years of age, had been suddenly seized nearly two years previously with intense pain in the arms, especially the left one, soon followed by redness of the back of the fingers and hand, extending up the forearm. Several weeks later the feet also were attacked. The pain was so intense that no shoes could be worn, and he was obliged to give up his occupation. Some time later small red papules developed upon the erythematous area. There were no abnormal appearances of the skin of the rest of the body, except that urticaria factitia could be easily produced. The pain gradually diminished while the redness remained in varying degree, being especially marked in the summer, with edema of the hands.

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[8] Elsenberg: Ref. Archiv. f. Derm., 1894.

[9] Berlin. klin. Woch., 1892, No. 45.

Senator considers it evident that the redness and swelling are caused by an affection of the vaso-motor nerves, that we have to do with a vaso-motor neurosis, and that it is the direct opposite of symmetrical gangrene of the extremities. The persistent papules observed in this case are very seldom seen in angioneuroses generally, and have never before been recorded in erythromelalgia. Both the faradic and galvanic currents were tried on this patient without appreciable effect. The application of cold did not relieve him, as is usual in this disease, but antifebrin had a marked effect on the recurrent attacks of pain.

Bernhardt presented a woman of fifty years, unmarried, who had had the affection for five years. The hands were red, swollen and exceedingly sensitive to pressure. The feet also became affected later.

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Reports of Societies.

FIFTH ANNUAL MEETING OF THE HARVARD MEDICAL ALUMNI ASSOCIATION.

(Concluded from No. 11, p. 273.)

The President: A medical degree taken at the University of Berlin; a very successful career as a practitioner in the much medically beschooled city of St. Louis; a considerable acquaintance with various parts of our country, combined with a wide reputation, and above all a determination to make Boston his future home, — all this must qualify one to tell you much which you want to know about medical education and medical practice. I introduce Dr. George J. Engelmann, formerly of St. Louis. I do not know that he has made up his mind whether Professor Chaplin was right when he talked to us two years ago, or whether the open letters in the Western newspapers were right when they metaphorically howled at him a year later. At any rate, Dr. Engelmann has read those remarks and is warned. I see no blood in his eye. Dr. Engelmann, formerly of St. Louis.

SPEECH OF DR. GEORGE J. ENGELMANN.

Mr. President and Gentlemen: — First of all, let me thank you for this invitation to meet with you; let me say I have looked forward with much pleasure to this meeting of the Alumni of the Harvard Medical School, and to the meeting with friends, old and new, whose welcome has ever been warm, whose hearts beat ever responsive. I have looked forward with pleasure to this meeting, very much like Dr. Dock. I have trusted to the promise of your President; but this importation seems to have failed, for his ships have gone astray on that strange sea of medical education, turbulent, stormy, — or, perhaps, a westerly gale has struck them.

Your President has given me a very kind and a very broad introduction, and in his letter he has proposed a subject such as he has hinted at now — some remarks upon the medical education and medical practice of the East and West. Comparisons are a little dangerous, gentlemen, and the dissecting scalpel may sometimes cut too deep, and wound; and, moreover, I believe that in our broad medical science we should know no East, no West, as we know no North or South, that the lines should be drawn only by genius and intelligence.

So much has been said upon this subject of medical education; it has been revolved before you in all its phases, at least as regards the great schools of the Atlantic Coast, the schools of our country. And in speaking of the University of Pennsylvania, of Columbia, of Harvard, and of that new light which has come, the Johns Hopkins, nothing can be said. They represent the advanced medical education, the advanced science of the Atlantic Coast, as we see it in the University of Michigan upon the Lakes, in Tulane upon the Gulf. The University of California will soon follow upon the Pacific, and that of Texas in the far South. It is needless to touch upon them. And to speak of Harvard, after what we heard from President Eliot, after the propositions which have been made for the future, I can but refer to some lines of Tennyson:

> "Good work is a fruit so ripe and rare
> It bears no fingering. Let me then beware
> To touch with venturous hand this curving branch,
> Nor lean too heedlessly against the tree
> Thus at its prime o'erladen heavily
> With golden harvests full and sweet and staunch,
> Lest I, by some rude shock, at this light hour
> Bring down the virtues in a mellow shower."

Gentlemen, comparisons are odious, and they will lead to nothing. Let us believe that we are all doing the best work, doing the work that is suited to the locality. You know the schools of the East, and you have just heard from our advanced institution in Michigan. Now, those are all institutions with large endowments, or with State aid; and when the money does not flow, they complain. You use the term Western, and what does it mean? To some the broad expanse of country west of the Alleghanies, or west of the Mississippi, or west of the Rockies, just as they happen to be situated. To some it is but as the idea which they have in the great capital of our sister republic of France, that whatever is beyond the buzz and hum of the Boulevard is *la bas*.

As a rule, when such comparisons are made, when you speak of those schools of the West, they are involuntarily compared with a few of the great institutions of the East — of the Atlantic Coast. You think not of the mushroom growth or of the shrub which grows even beneath the shade of Harvard, or the walls of Pennsylvania; it is simply the great advanced schools compared with the pioneers that are doing the practical work.

Great changes have taken place in medical education in this country since the first move made by the State Board of Illinois; the schools are being brought into line; progress is forced upon them, and competition forces it. Yes, you speak of a city with eleven or thirteen medical schools. Chicago has fourteen, and she is none the worse for it. It stimulates; and let the best man win. The better schools will grow, and the weaker ones will die out.

It is unfortunate that there is too much in the status of medical work throughout this country; we have too many schools; we have too many doctors; and, unfortunately, the dignity of the profession suffers. You are not aware of that so much here in the fortunate circumstances in your great centres. And whilst I admire every diligent worker, every untiring student, I should say that the nobility of our profession must stand foremost. Our calling is not a business alone; neither honor, nor the desire for the soaring eagle of glory, or the heavy eagle of gold should make us waver from our path. We have invalid conditions, or conditions of which you know little or nothing here.

As I say, you speak of those institutions which have rich endowments, State aid institutions, which stand at the apex of the great pyramid of medical education; but there is a broad foundation, a broad basis, which gives the mass of practitioners to this country, and those are schools which are dependent upon themselves. The small ones can train the students, but they have no laboratory facilities, perhaps no clinical facilities. The larger ones — and there are schools with over 700 paid-up students — have their laboratories, their hospital attachments, and their clinics; and it is the work of the faculty to secure that for them, not a dollar comes from the State or from any public-spirited individual.

The great difference in the leading schools of that great country and the schools of the great centres is that here — and, above all, in this school of Harvard — you can devote time and money to the study of medical science, to the laboratory work, whilst in the more practical and more distant regions the clinic and the hospital work is all important. But the laboratories are well furnished. Let me mention, for instance, Rush Medical College, which this past year has spent $60,000 upon a laboratory, and $60,000 from the pockets of the faculty. If you will, it is a self-sacrificing profession which does this work, but the hospital is the important feature. And in the city of St. Louis two or three schools have their hospital attachments, have their hospitals under their immediate control, by the side of the school, with their clinics, sometimes a double set of clinics running all day. In Chicago five schools have their hospitals, and under the immediate control of the faculty, with facilities of city hospitals and other institutions in addition. That is the essential feature. And whilst the four-year course is a nominal one — three years of the school and one under the guidance of the preceptor — that depends upon the student. And the improvement in those schools will depend upon the general education, the improvement of the student and of the legislator; and much, in fact all, has been done in the elevation of the standard of the medical schools by legislation.

A large number of the Western States demand a diploma from a three years' school, or they accept no diploma from any school whatever, but demand an examination before their board.

The State of Montana has just passed a law which admits to practice in that State only after graduation from a full four-term school after the 1st of July, 1898; and another step has been taken by one of our States, which perhaps may aid greatly in advancing the standard of the student, namely, that it takes away from the college, from the medical school, the privilege of admission, but admits to the medical schools of the State only after examination by its State Board. That, I believe, is a new departure, and is one which will tend certainly to attain the very point President Eliot and Dr. Dock have spoken of. You have no difficulty here, but the difficulty will be with the mass of schools throughout the land.

Mr. President, you have kindly in your note left it open for me to make such remarks, if not upon that subject, upon any other, and for that reason you will pardon me, too, if I will not touch upon the subject you have mentioned; the answer the gentlemen will see for themselves. I would say but one thing more, and that is that I trust that this great school will not stand proudly aloof in the future, as she has done in the past, but that she will extend a hand to her younger sisters, though many of them be still in short frocks. Much good will thus be done. And let us in our broad humanitarian work during this important period of a struggling profession, a rapidly progressing profession, let us forget and forever cast aside those boundaries East and West, as you have of the North and South.

Let me say a few personal words however, that is, to thank you from my heart for your invitation, Mr. President and gentlemen, to be your guest upon this occasion. For years I have known the warm hospitality of my professional brethren of this city; and as I have come to live among you, I am doubly glad, gentlemen of the Harvard Medical Alumni Association, to have broken bread with you on this day.

The President: I have received a letter of regret from one of our Vice-Presidents, Dr. Israel T. Dana, of Portland, who is unable to be with us, much to his sorrow, being engaged to-day at the Commencement of Bowdoin College. Another Vice-President, Dr. John Green, has come all the way from St. Louis. You remember the way in which Professor Chaplin referred to Dr. Green two years ago:

"Some thirty years ago the faculty of one of these medical schools formed an organization, which was a hard and fast agreement that they would turn over every dollar of profit to a fund, put it out of their control entirely, and devote that fund to furthering medical education. As a result of this they have lately built what I think is one of the very best educational buildings I know of. It has large laboratories; it has splendid lecture-rooms; it has every feature of the most modern methods of teaching. And that has been built out of the self-sacrifice of members of the medical profession. I believe it is a lone example of such self-sacrifice. I know of no other profession that can boast of such an example; nor do I know of any other school in the medical profession that can show it either. I like to mention it here because that building, exemplifying as it does the latest ideas in medical education, is the work of a graduate of this school, Dr. John Green."

I present to you Dr. John Green, of St. Louis, a graduate of the class of 1866, and will ask him to say a few words.

SPEECH OF DR. JOHN GREEN.

Mr. President and Members of the Alumni Association of the Harvard Medical School: I feel a little like the Prodigal Son, both for having gone away from home, and stayed away so long, and now that I come back find myself entertained with the fattened veal as in the case of that historical personage.

You have spoken of the St. Louis Medical College, now the Medical Department of Washington University, of which Chancellor Chaplin is the head. The facts are essentially as they have been stated. The school was like the other schools in the country, much like the Harvard Medical School, the Medical Department of the University of Pennsylvania, Jefferson, the College of Physicians and Surgeons of New York, Bellevue, etc., a two years' school. It was not as good a school as the Harvard Medical School was when I was a pupil in it, but its requirements for graduation were as high, and of the same kind as those of all the other institutions which I have mentioned, namely, attendance upon two annual courses of medical instruction during a period of pupilage of three years. That Harvard was better than any of these other schools in carrying out its solemnly published requirements is evidenced by the fact that Harvard has, from the beginning, uniformly insisted upon satisfactory and positive evidence that the candidate for graduation shall have fulfilled the condition of three full years devoted to medical study; and the certificate to that effect was always a certificate from a reputable physician, a member of the Massachusetts Medical Society in most cases, the Massachusetts Medical Society visiting with the greatest censure any one of its members guilty of the act of giving a false certificate of time to a student.

After the completion of my medical course here I went to one of the other great cities of the country, thinking that I might profitably spend a winter there listening to medical instruction by other noted American teachers. This was in the fall of 1858. I found there a gentleman, an attendant upon the courses of one of the great schools of the country, who had graduated at Harvard in July — commencement then occurred in July of the year before, 1857. He told me he expected to graduate in medicine in March or in April, 1859, about three months less than two years from the date of his graduation in arts at Cambridge. I said: "How are you going to do that? The published requirements of the school in which you are attending lectures are the same as the published requirements of Harvard, and Harvard requires three years devoted to medical study after graduation in arts when the student is such graduate. Who do you have to convince that you have studied three years?" Said he, "I shall hand in my two courses of tickets with an application for graduation and the graduating fee." "But," said I, "to whom do you hand these in?" "To the janitor. And I shall also hand to the janitor five dollars, for which he will give me a tin box in which to keep my diploma."

I believe that every leading medical school in the United States in 1858, with the exception of Harvard, contented itself with evidence that a student had taken out two courses of medical lectures, and cared for nothing else, provided he passed some sort of an examination, an examination differing in different schools. With Harvard came a reform. Harvard was then in advance, as I believe, in its real requirements of all the other schools in the country; but under the leadership of its young President about twenty-seven years ago, with the co-operation of men in its faculty who believed that the system of medical education here was miserably inadequate, a course of three full years of medical instruction was provided by Harvard as an indispensable requisite to candidacy for its degree. Harvard has been followed by other medical schools. I believe first by the University of Pennsylvania, and then by the College of Physicians and Surgeons, the Medical Department of Columbia University in New York. The date of Ann Arbor establishing a compulsory three years' course without permitting substitution in the way of time spent with a preceptor for one of three courses I believe was later, considerably later. The great colleges of the East very slowly fell into line following the example of Harvard, and for the proud position that Harvard holds, of having been the pioneer in this work, I believe the medical profession of the country, with the Harvard Medical School, is indebted to the present President of the University. That the change would have come, and come soon, is certain. That Harvard would have been the first in the country to make that reform, is perhaps doubtful.

The reforms in medical education that have occurred within the past thirty years came in the beginning from within the medical colleges. We have now reached a period when reform in medical education through extension of number of courses of instruction required, lengthening of the number of years of study demanded, is coming largely from without, it is coming through the pressure of the State boards of health. Just so long as but few State boards of health — and I believe the Illinois State Board of Health was most conspicuous as a pioneer in making these requirements — just so long as but few State boards of health lay down effective rules looking to a more extended course of medical education, just so long did the temptation exist for a medical school to graduate cheaply, on short terms of study, as many students as they could. Only was it through the establishment of boards of health in many States in the interior of the country that the student who had got his degree cheaply, as measured by expenditure of money and of time, found it difficult to settle where he wanted to, impossible to settle in the place of his choice in many cases except by going through the further ordeal of an examination of the board of health of the particular State in which he wished to settle. These requirements of the State boards of health have done much. It is, however, a misfortune that the State boards of health, creations of the Legislatures of the States, have, as might be expected, acted independently of each other; and it is no easy task to-day for a medical institution as far West as where I live to adapt its requirements for graduation to the great number of conflicting requirements of State boards of health.

It has been the fashion now for the State boards of health in the interior of the country to make one of their requirements attendance upon three annual courses of medical teaching, but to append to that a requirement that the candidate shall have been four years engaged in the study of medicine, but without providing what sort of evidence shall be required that the student has so devoted another year. Practically, the condition of four years' medical study is but a nominal one, and is likely to remain a nominal one, and to fall into the contempt that the requirement of three years of medical study fell at the earlier period of which I speak, some thirty years ago or more.

You have said a word about the medical college with which it has been my pleasure to be in some way connected for over twenty years, as a member of its faculty some ten or a dozen years. The members of the faculty of that school did, as Chancellor Chaplin stated here two years ago, devote their very considerable emoluments derived from students to the consideration of a fund, and employed the ablest legal assistance to so tie up that fund that it must be forever devoted to the advancement of medical education. For a series of years each member of the faculty, instead of receiving his dividends, turned them into the creation of this fund, and through the investment of that fund, and the subsequent sale of the property, the college building and the land upon which it stood, they were able to get money enough to warrant them in the erection of a new building designed with distinct reference to the modern teaching of medicine, with all that that implies in the way of laboratories, chemical, histological, physiological.

The Medical Department of the Washington University to-day, as in the past, devotes its entire income to the cause of education, employing on salaries much more modest than could be wished, competent teachers in chemistry, in physiology, in histology and bacteriology. Its members, who are practitioners of medicine, rely upon their practice for their income, draw nothing from the school, but all contribute something every year under the pressure of need of developing the school in some particular direction.

Let me say one word about the Medical Department of Harvard University, suggested by the remarks of the President. The Harvard Medical School is instructing, or attempting to instruct, simultaneously, and by the same methods, two notably distinct classes of students. The one class comprising somewhat over twenty per cent. at present, I believe, of the total number of matriculates, is made up of graduates in arts, letters or science. These graduates are normally of the age of twenty-three or twenty-four. A period of four years as medical students, as has been stated, brings them up to the age of twenty-seven as the average age of graduation. They come into school very largely through selection of subjects of study in college with reference to a medical career; they come well equipped with knowledge in the natural sciences, in chemistry, in physics and in modern languages, which open to them a literature of the greatest importance and of ever-increasing importance. The second class is young men whose entrance examination, I think, may fairly be stated to represent about the level of one year's work in a high school. The status of the university in prescribing a minimum age for graduation at twenty-one now contemplates the reception of such students at the age of seventeen. These are men untrained in methods of medical study, of laboratory; they are men of narrow education, extremely limited training. It seems to me that the logic of the situation is this, that Harvard University must before long do in the Medical Department what it has determined to do in the Law Department, receive only men holding a first degree in arts, letters or science, or else it must establish two courses of instruction, one suited to the limited capacity of the student admitted on examination and leading to a lower degree; the other a higher course suited to the abilities of the trained men six or seven years later. The outcome of it, I believe, will be the ultimate establishment of a requirement of a degree as a condition for commencing the study of medicine.

I have said that the pressure brought upon the medical schools in the interior of the country has come from State boards of health. As an illustration of how things are, the requirements imposed under the statutes of the different States as regards the candidacy for a degree in medicine, or in anything else, we have the statement of our guest to-night from New York of the working of the University of the State of New York in determining by examinations of the candidate, or of evidence in the way of diplomas, his fitness to be recognized as a student before the medical school can receive him as a candidate for a medical degree.

The requirements in another State were tersely stated and with a moderation which did not reach the actual state of facts, by a very judicious and well-informed man, at this moment acting as mayor of one of the large Western cities, in which he said, "Under the statutes of this State three barbers can associate themselves, call themselves a medical college, grant medical degrees upon any terms they please." The statute does not require that the three men organized as a medical college shall be so nearly affiliated to physicians as barbers; they may be the first three men who pass the window on the street, provided they are inhabitants of the State. That State, I am sorry to say, is the State from which I come, the State of Missouri. That state of things has existed under the general statutes of the State to my certain knowledge for thirty years, probably a good deal longer. It is the State Board of Health, a creation of a comparatively recent year, which exercised its pressure upon medical schools by refusing to register graduates of them unless they conformed to certain minimum requirements, rather than anything in the State law requiring the granting of degrees. The State Board of Health discriminates between degrees legally granted; or in the case of degrees which it valued highly enough, it enrolled the holder as a legally-qualified practitioner.

I must say that the cost of establishing a medical school, in the way of legal fees, provided you get the good-will of a lawyer acting in the court, and provided they do not conflict with property rights, as established by the State, is five dollars.

The number of medical schools in St. Louis at the present time — I took the trouble a few months ago to count them up — is eleven. Two of them are old, established medical schools, existing under charters obtained more than fifty years ago. The others, representing various degrees of respectability and aims on the part of their managers, are organized under this general law which I have mentioned. Of the eleven schools, seven are known as regular schools of medicine: one is called the School of Homeopathy; another is called the School of Eclectic Medicine, whatever that may mean; and another has the title of College of Hygienic Physicians and Surgeons, whatever that may mean. There is also a College of Optical Science, pretending to teach jewellers' clerks how to treat grave diseases of the eye. I thank you for your kind attention, Mr. President and gentlemen.

The President: Gentlemen, I will detain you one moment for the final sentiment of the day, which is to the Dean of the Harvard Medical School. The sweet course is always served the last. There was a time when there was no benediction which each and all of you would rather have had than that of the Dean of the Harvard Medical School. I believe much of that feeling still lingers. I therefore intended to present to you Dr. W. L. Richardson, who can preserve the same impartial skill and unruffled gentleness at the birth of an infant, at the deading of a candidate for a degree, or on the martial field with the Cadets. The only thing which disturbs his well-balanced equilibrium is the prospect of making a speech, and I regret to see that he has fled to his Class Dinner where neither speeches nor reporters will be allowed.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

SEVENTEENTH ANNUAL CONGRESS, ROCHESTER, N. Y., JUNE 17-19, 1895.

FIRST DAY.

THE President, JOHN O. ROE, M.D., of Rochester, after thanking the Association for the honor conferred upon him, and welcoming the members to the city of Rochester, made some observations on

THE RELATION OF DAMP AIR TO DISEASES OF THE AIR-PASSAGES, PARTICULARLY IN THE LAKE REGION.

No one climate is good for every disease. That good for affections of the air-passages may be the opposite for biliary affections. Any climate may act by its direct effect upon internal organs, and by its indirect upon the habits and mode of life of the individual. In the Lake region biliary disturbances are comparatively rare, while air-tract troubles are common enough. It possesses a moist atmosphere with sudden variations of temperature and a low mean annual temperature.

The amount of moisture in the atmosphere in any given locality depends mainly upon four things: (1) the nature of the soil, (2) its cultivation, (3) range of temperature, and (4) the height with reference to the sea-level. Light, sandy, porous soils easily drain after rain, and consequently do not give off so much moisture as heavy soils with underlying clay which are poorly drained. In the Lake region both kinds of soil are found, and the land is, as a rule, highly cultivated — a condition also reducing moisture in the air. The air is apt to be cold, owing to the proximity of the chain of great lakes. This large body of cold water gives for Rochester a mean annual temperature of 40° F., while that of Albany, in the same latitude, is 43°, and for the spring, above 46°. The Lake region also has frequent and rapid changes. The early warm days of spring are followed by chilling blasts from the North. The amount of cloudiness is considerable, averaging, for the past twenty-five years, six and one-tenth days out of ten. The average rain-fall is 27.8 inches.

The bad effects of damp air upon the human body are in the way of checking insensible perspiration; and hence on mucous membranes, by osmosis and the hindrance of elimination, there results, especially in the nose, turgescence, hyperemia and hyperplasia — all of which are rendered more probable from the normally abundant vascular supply of this region.

Sleeping with open windows is another cause of frequent colds. A damp night-air is breathed which could not possibly be comfortably borne in the daytime. Bowditch, over thirty years ago, conclusively showed the relation of damp air and soil to phthisis, and though we then knew nothing about the tubercle bacillus, yet we now recognize the soundness of his views as to the share which the foregoing deleterious agencies bear in the causation of the malady. We must, therefore, learn how to drain our lands and houses and ventilate our sleeping-rooms.

DESSICATED THYROIDS IN GOITRE,

a paper by DR. E. FLETCHER INGALS, of Chicago.

For fifteen years the writer had treated bronchocele and exophthalmic goitre with the usual iodides, iodine and carbolized glycerine parenchymatous injections. For the past three or four years he has used the thyroid products, and finds the dessicated preparations the best. Six grains represent one entire gland. He has used the remedy in six cases, all of which save one are still under treatment and had been previously on the old plan of medication. His six cases had seemed to do well, the neck decreasing in size and other symptoms being favorably modified. He had collected from the practice of other physicians some 50 cases similarly treated. In one series of 25, all but seven showed distinct improvement. Headache was noticed after the remedy was begun in 30 per cent., dizziness in 37 per cent., and increased cardiac rate in 25 per cent. Out of the 50 cases, the size of the neck was reduced in 38. Out of seven cases of myxedema five had been improved in the neck condition. As to weight, the gains and losses of the different patients about balanced each other.

As to disagreeable effects of the remedy, headache was noted in 18 per cent., dizziness in 20 per cent., trembling in 14 per cent., increased rapidity of the pulse in 11 per cent., weakness in 17 per cent., nausea in 7 per cent., loss of weight 25 per cent., and in one instance uterine contractions. Dr. Ingals drew the following conclusions:

(1) Thyroid products have a profound physiological effect upon the nervous and circulatory systems, causing painful feelings, vascular fluctuations and at times rapid heart action.

(2) Such symptoms can result from a daily dosage of from one and a half to two glands.

(3) The internal administration seems to give as good results as the hypodermatic.

(4) The dosage should commence with two grains of the dessicated preparation three times a day, and be gradually increased to six or seven grains.

(5) It seems to affect body weight; but this in a given case under therapy is uncertain, and varies in the same individual under varying circumstances.

(6) The gastric disturbances sometimes observed may be merely incidental and not due to the remedy.

(7) The remedy is good in myxedema.

(8) In cases of goitre, not exophthalmic, it seems to aggravate heart action.

(9) It reduces the size of thyroid, but does not seem to affect the cystic form of the disease.

(10) There is no proof whatever that it is of any good whatever in any maladies except these just enumerated.

DR. E. L. SHURLY, of Detroit, discussed the paper, saying that he had been disappointed in his results in some 15 or 20 cases. He narrated the case of a boy who had been operated on for removal of the thyroid and who had seemed to suffer from mental apathy, etc., after the operation. His voice was piping, though the larynx showed nothing but a slight loss of tension of the cords. Later, thyroid-feeding had done wonders for him, both as to his mind and his general physique.

Dr. Shurly thought that laryngologists should condemn the extirpation of the entire gland. The leaving behind of a single piece would suffice to avert the unfavorable mental condition resulting from complete ablation.

DR. W. E. CASSELBERRY, of Chicago, had had improvement with thyroid in one case of exophthalmic goitre, but no cure. He quoted from a recent article of Brun, of Tübingen, who had found that the younger the patient the better were the chances of cure. In animal experimentation sudden death had been noted in one case.

Dr. Ingals insisted upon the importance of giving the patients pure drinking-water. In many localities it seemed probable that the water had a causative septic influence.

ELECTROLYSIS BY A CURRENT-CONTROLLER FOR THE REDUCTION OF SPURS OF THE NASAL SEPTUM

was the title of a paper by **Dr. Casselberry.**

The writer exhibited a small, portable current-controller for use with the Edison (continuous) current, and designed by means of a lamp in the circuit to subdivide the powerful street current. It is known as the "Macintosh" instrument.

Electrolysis is not an universal substitute for old surgical procedures. The limits of the operation are well defined. The ideal electrolytic current is one of moderate high tension (voltage) and of a comparatively low-current strength (ampèreage). The current in Chicago is one of 110 milliampères, and this is reduced by a lamp resistance just one-half, and further subdivided by the apparatus of the current-controller. The bi-polar method of electrolysis is the preferable one, and the seance should last from six to eight minutes. The electrodes are about 15 millimetres long and half a millimetre thick. They are made of irido-platinum.

He has had experience with ten cases, and would divide them into three types:

(1) Spurs, strictly cartilaginous. We must be careful not to push things too far. Cartilage will become devitalized in about eight minutes. Results are good.

(2) Spurs, a mixture of cartilage and bone. Here the result varies directly according to the percentage of cartilage present, and hence tabulated results of different writers show a wide discrepancy.

(3) Spurs, wholly bony. Here this method is inapplicable. Needles will not penetrate bone, nor will the electrolytic current dissolve it.

The advantage of the method where applicable is freedom from hemorrhage; but, in spite of this, it can never be a universal substitute for the saw or the trephine. It is more tedious and less brilliant than other procedures. It is useless in simple deviations. Under cocaine even it is not wholly painless. Care should be taken to watch the sound nostril and as soon as we observe on that side any discoloration or bubbling of gas or hear a faint crackling, we must desist, or else perforation will probably result.

Discussion was opened by **Dr. J. E. Newcomb,** of New York, who had in two cases had fairly good results. He used steel needles, which of course corroded; but the metallic salts formed were ferric salts, consequently harmless and possibly hemostatic. He could not believe the statements of Moure and others that they can electrolyze bone.

Dr. W. H. Daly, of Pittsburg, used electrolysis years ago, but laid it aside for the usual surgical measures. It is a waste of time, and is more a theory than a fact. Whatever is done is rather by a cautery action than by a true electrolysis. There is danger of middle-ear trouble, traumatic sepsis and prolonged discomfort. His ideal method is the trephine driven by the Vilbliss motor. We cannot use Dr. Casselberry's controller with the alternating current, which is the one now more commonly used in commerce; and as to measuring the current with an ampère meter, he had said, and would say again, that he believed them to be as unreliable as gas or water meters.

Dr. E. L. Shurly, of Detroit, said he would as soon think of amputating a thigh with lunar caustic as to think of reducing nasal spurs with electrolysis.

Dr. Jonathan Wright, of Brooklyn, thought there was a field for electrolysis in phthisical and other debilitated conditions where shock and loss of blood were to be avoided at all hazards. These patients are in a delicate condition, and it is easy to send them down hill. It is easy enough to remove the anterior spurs any way, as they are generally soft, but those situated farther back are apt to be hard.

Dr. Ingals would use in the phthisical cases the galvano-point heated to whiteness.

Dr. J. H. Lowman, of Cleveland, stated that at the last International Congress the weight of opinion had been against the method.

Dr. S. Hartwell Chapman, of New Haven, thought Dr. Casselberry's controller faulty in that it did not subdivide the current sufficiently to prevent shocks, seeing that the current was used about the head. He had found Vetter's instrument free from this objection.

Dr. A. B. Thrasher, of Cincinnati, inquired if the bi-polar method was less painful than the mono polar.

Dr. J. W. Farlow, of Boston, spoke in regard to hemorrhage, severe instances of which he had seen follow the use of the saw even in non-bleeders.

Dr. Daly suggested the use of aluminium intranasal splints for checking hemorrhage.

Dr. Casselberry, in closing the discussion, admitted the validity of Dr. Chapman's objection, and hoped to remedy the fault in subsequent instruments. As to cauterizing cartilage, he had seen severe reactionary inflammation ensue from this procedure.

SECOND DAY.

Dr. J. W. Farlow, of Boston, gave the clinical histories of

TWO CASES OF LIPOMA.

Case I was that of a male child, aged two years, in whom a reddish-lobulated pedicled growth grew from the inner side of the right cheek, just anterior to the mouth of Steno's duct. It was soft, movable and not ulcerated. Removed without hemorrhage with wire snare.

Case II, male, aged sixty-six years, in good health. Fifteen years before a tumor was noted in the mouth, but it gave no great discomfort for several years, when finally a piece was cut off. In March, 1893, it had grown again so that the patient was obliged to hold a small piece of cloth about it to prevent injury from the teeth. It could be moved forward beyond the lips and seemed to run backwards toward the larynx. Occasionally a portion of it seemed to fall down between the cords into the trachea and thus cause suffocative attacks. With a cold-wire snare a part was removed, and the patient was soon lost sight of. Again it recurred, and again he returned. Finally, in December, 1894, it was removed with the galvano-cautery snare. No recurrence in three months. Attachment seen to be just in front of the arytenoid cartilage. Microscopical examination showed "sub-mucous polypoid lipoma."

SOME REMARKS ON REMOVAL OF THE TONSILS,

a paper by **Dr. Farlow.**

He limited his remarks to the question of choice of operation. We must first break up adhesions between the tonsils and the faucial pillars; otherwise, whatever else we do, our results will be unsatisfactory. Dr. Farlow prefers the écraseur, and has devised a special instrument for this purpose based on Hooper's snare, but with several modifications. In case adenoids co-exist, he gives an anesthetic, otherwise not. The operation would be easy if all large tonsils were found in large mouths. Unfortunately, however, they are often found in small mouths with narrow jaws. He has also used the guillotine. He employs ice freely, and cocainizes the tonsil. With the écraseur it is possible to clear out all the tonsillar tissue. He also employs the Ruanet punch-forceps and Hartmann's conchotome for the deep-seated masses high up between the faucial pillars; also discission knives to open up the tonsillar surface so as to afford points of application for the punch forceps. He considers the galvano-cautery entirely too tedious.

Dr. F. H. Bosworth, of New York, said that no one instrument would answer for the removal of the tonsils in every case. The guillotine will remove the large rounded masses, but the diffuse cases with adhesions must be dug out.

Dr. Ingals had not found that cocaine anesthetizes the tonsils; and, moreover, he believes that it promotes bleeding. The latter often occurs from small tonsils whose removal is indicated but which are not large at the time of operation.

Dr. Daly said that the ordinary tonsillotome only does half the work. We must thereafter trim with knife and forceps.

Dr. Casselberry believes that children may bleed, and never operates without having a reliable galvano-cautery at hand to use if necessary as a hemostatic. In fibrous tonsils he prefers the galvano-cautery snare. It is difficult to separate the faucial pillars; but if he can get their muscular fibres free, he does not mind the sacrifice of a little mucous membrane.

Dr. Shurly does not follow the crypts in ignipuncture, but endeavors to burn diagonally to them, thereby crossing the lymph spaces and endeavoring to replace a fibroid induration by a process of contraction.

MELANCHOLIA CURED BY INTRA-NASAL OPERATION.

Dr. Bosworth reported the case of a man forty-two years old, first seen in 1891. For ten years previously he had suffered from depression and melancholia. He was unfitted for business, complaining of a twisting feeling between the eyes at the root of the nose. Falling into the hands of various specialists, each one of whom thought he saw in his own class of maladies an explanation of the patient's trouble, he was operated on for varicocele, wore glasses, was operated on for stricture, was castrated, circumcised, had legation of the internal pudic artery, operated on for hemorrhoids, had tenotomy of the eye muscles, enucleation of one eye, cauterization of the spine, and wore a seton in his neck. All these procedures were useless. It was discovered that the right nostril was occluded by a bulging of the cartilaginous septum nasi, and that the left middle turbinate was enlarged, in a state of myxomatous degeneration, associated with ethmoiditis. Clearing out of both nostrils started the man toward recovery, and he soon became mentally as well as ever.

SUPPURATIVE ETHMOID DISEASE, FOLLOWED BY INVASION OF THE SPHENOIDAL SINUS, ABSCESS OF THE BRAIN AND DEATH.

Dr. Bosworth also related a case of this nature. A dentist, aged thirty-three, had suffered from left-sided offensive nasal discharge for some years, and latterly from the right side also, with headache, left-sided head-neuralgia, but no fever, for a period of four days. Pus was seen oozing down between the left middle turbinated bone and the septum. Free drainage of the ethmoid region was established by the sharp gouge, with relief of the symptoms for six days, when they again returned. With a burr an attempt was made to reach the sphenoid cells, but it was not possible to determine whether the sphenoidal sinus was actually penetrated or not. Next day patient had a chill, fever, 106°, semi-coma, paralysis of left face and arm, another rigor; and he died in twenty-four hours. No autopsy. The lesson from the case was that ethmoid disease, while usually harmless, may set up sphenoid disease leading to a fatal result; and sphenoid disease apart from ethmoid is exceedingly rare.

A CONSIDERATION OF SOME OF THE MORE IMPORTANT PRINCIPLES OF INTRA-NASAL SURGERY,

a paper by **Dr. W. K. Simpson**, of New York.

The paper was a plea for conservatism in the surgical treatment of intra-nasal affections and for rigid antisepsis during and after such procedures. There is a pre-operative period during which we should do as much as possible for the patient by climate, diet, clothing and general environment. Care should be taken not to operate any more than necessary in mixed conditions of the mucosa tending to atrophy. Much of the so-called "grippe," "heavy cold," etc., after intra-nasal work is in reality mild sepsis.

Dr. Mulhall, in discussing the paper, insisted upon the importance of using the cautery at a white heat and of never allowing it to cool *in situ*. Radiated heat might cause some trifling hyperemia, but this could be promptly removed by the use immediately after cautery of a saturated solution of bicarbonate of soda.

Dr. J. H. Bryan, of Washington, read a paper entitled

A FURTHER CONTRIBUTION TO THE STUDY OF SUPPURATIVE DISEASE OF THE ACCESSORY SINUSES,

in which he reported four cases: abscess of the right maxillary sinus, resulting from dental caries; suppurative ethmoiditis, terminating in caries of the anterior ethmoidal cells; abscess of the left frontal sinus, resulting from nasal polypi; and hypertrophic rhinitis and abscess of the frontal, ethmoidal and maxillary sinuses, with caries of the fronto-ethmoidal cells. The latter presented the anomaly of a communication between the frontal and maxillary chambers. This anomaly has been observed several times in the dissecting-room on healthy skulls, and it is at times doubtless the result of morbid processes.

The discussion on the two foregoing papers on sinus disease was opened by **Dr. Wright**, of Brooklyn, who related a case of undoubted maxillary disease in which it had been extremely difficult to detect the exact source of the pus. He would counsel against early operation in this class of cases.

Dr. Ingals thought it better to reach the sphenoidal sinus from below than on its anterior aspect.

Dr. Gleitsmann preferred to open anteriorly, with Schaeffer's probe passed according to the usual method. He had had one severe case of secondary hemorrhage after operation for sphenoidal disease. The anterior wall of the sinus is not very hard, and it can be easily penetrated.

Dr. Shurly had seen cases of nasal discharge which he attributed to a neuritis following organic disease of the olfactory bulbs, and which he had not looked upon as ethmoid disease.

Dr. Daly advocated opening the nose along one ala, and laying it over on the face so as to reach the sinus more easily.

Dr. Mulhall thought the brain better protected against injury in the sphenoid region than in the ethmoid. He would again call attention to the value of the teachings of Grünwold, whose monograph had not received the attention it deserved.

Dr. Jas. E. Newcomb, of New York, read a paper on

LUDWIG'S ANGINA.

He objected to this name on the ground that nomenclature in medicine should be based upon pathology and not on names of authors. Moreover, Heim, thirteen years before Ludwig, was probably the first to observe this malady, which is generally defined by modern writers as a diffuse, phlegmonous inflammation of the floor of the mouth and of the intermuscular and subcutaneous cellular tissue of the submaxillary region. To the latter many writers confine the site of occurrence. Different writers seem to have had different conditions in mind.

The specific identity of the affection has always been a mooted point. Ludwig gave as its characteristic features: (1) A peculiar wooden induration of the tissues, not receiving impression; (2) a uniform spread of this induration in such a way that it is always sharply bordered by a zone of entirely unaffected cellular tissue; (3) a hard sub-lingual swelling with a bolster-like mass around the interior of the lower jaw of a deep red or bluish-red color.

It is impossible to harmonize the various conflicting statements, but it seems fair to regard the disease as an intensely infectious phlegmon occurring under peculiar anatomical conditions. Only the ordinary suppurative germs have been found — nothing pathognomic. Fatal cases have shown a general tissue disorganization, with sloughs, ichor or offensive pus.

Causes favoring infection entrance are tonsillitis, labial herpes, eruption and caries of the teeth. Cold, as an exciting factor, is probably more often some undeterminable infection.

In the true Ludwig's disease, pus originates in a triangular pyramidal space, the apex of which, situated below, corresponds to the point where the myelo-hyoid muscle borders the genio-glossus, and the base of which, situated above, stretches along under the tongue. Its external (oblique wall) is made up of the internal face of the inferior maxilla and the myelo-hyoid muscle and the internal (or vertical) by the genio-glossus and hyo-glossus. The infectious germs, first invading the sub-lingual, may also penetrate the sub-maxillary sheath, or the latter may be attacked by the sub-lingual pus which has disassociated the fibres of the myelo-hyoid muscle.

The local and general symptoms are those of pus formation, with subsequent pressure on surrounding parts. Special importance is attached to the appearance on the inner side of the dental arcade of a pad or button-like area of induration. A differential diagnosis must be made from simple sub-maxillary adeno-phlegmon, Fleischman's hygroma and osteo-myelitis of the jaw.

Statistics of 58 cases are given with fulness sufficient for analysis. Of these, 44 were in men, nine in women, and five in infants whose sex is not stated. The oldest patient was sixty-six years of age, and the youngest three months. Forty per cent. of all the cases occurred between the ages of twenty and thirty years. Recovery is noted in 33 and death in 25. In nine, bacteriological examination was made with the following results: streptococcus pyogenes, four; staphylococcus pyogenes aureus and albus, one; erysipelas cocci, two; and in one instance an indeterminate microbe, a little longer and narrower than the bacillus coli communis but clearly distinguishable from the latter by culture reactions.

Treatment embraces early incision, subsequent rigid antisepsis and general support.

Reference was also made by the writer of the paper to a recent article by Semon, of London, advancing the proposition that edematous laryngitis, acute edema of the larynx, erysipelas of the pharynx and phlegmonous pharyngitis are but various varieties of septic inflammation of the throat, differing only in grade of severity and localization, but all having the same general etiology. He asserts that this view constitutes a simple clinical application of the bacteriological principles to this group of septic inflammations.

(To be continued.)

Recent Literature.

Manual of General Medical Technology, including Prescription Writing. By Edward Curtis, A.M., M.D., Emeritus Professor of Materia Medica and Therapeutics, College of Physicians and Surgeons, Columbia College, New York. Third Edition, conformed to the U. S. Pharmacopœia of 1890. William Wood & Co. 1895.

This volume is small enough to go easily in a pocket, and is an excellent book of its kind.

Both the chapter on Prescribing of Medicine and that on Modes of Medication have many excellent practical suggestions. At the end of the book is put the useful table of solubilities taken from the U. S. Pharmacopœia of 1890.

A New Medical Dictionary. — The existing medical dictionaries, writes a correspondent of the *Westminster Gazette*, do not contain any reference to the following diseases, namely, "Brown Titus" (very prevalent in Yorkshire), and "Nervous Nobility." We had a servant who suffered from this, but her case was not so bad as that of a friend of hers who had an "eternal" complaint and took "interjections." This same servant was very indignant at the time of the last census. She refused to fill in the column headed "*Sex.*" She thought Government ought not to be so inquisitive, and though she was a "Wesleyan Methodist" that was nobody's business but her own.

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EXPERIMETAL DEGENERATIONS FOLLOWING UNILATERAL LESIONS OF THE CORTEX CEREBRI IN THE MONKEY.

THE subject of cerebral localization remains, in many of its aspects, vague and incapable of exact demonstration. Opinions are still conflicting as to the real significance of the cerebral cortex in its relation to muscular action. Two schools stand strongly opposed to each other, both represented by men of unquestioned scientific attainment, and any unanimity of opinion seems even more distant now than it did ten years ago. We find Goltz and his followers, in the light of their experimental research, scoffing at exact localization, while Ferrier, Horsley and their school stand just as firmly entrenched in their teaching of the so-called "cortical centres." The ultimate outcome of all the discussion will doubtless lead to a compromise, or at least to a restatement of the facts in our possession, which will in some way reconcile the apparently conflicting views. It is self-evident that, in such a matter, no real and ultimate antagonism can exist. In the meanwhile we should welcome every painstaking research, which is likely to throw new light on the subtle and much-vexed question.

A communication recently made by Prof. V. Horsley to the Royal Society of England, on work done by Dr. E. Lindon Mellus, with a copy of which in abstract we have been favored by the secretary of the Royal Society, is but another evidence of the untiring zeal of English investigators in the difficult field of brain anatomy and physiology. The experimental work was done at the pathological laboratory of University College, London. The animal used was the bonnet monkey (macacus sinicus), the object of the experiments being an attempt to trace by the anatomical method the degenerations resulting from minute lesions of the cerebral cortex in distant parts of the brain and in the spinal cord, and so far as possible to determine the destinations of the various fibres concerned. The lesion, in each case, was made in the motor area of the left hemisphere. Fourteen successful operations were performed, three being lesions of the hallux centre, four of the thumb centre, and seven of four separate centres in the facial area. In each case, after etherization, the skull was opened aseptically, and the centre to be removed located by stimulation with a weak faradic current. About sixteen square millimetres of cortex, embracing the chosen centre, were then excised with a certain amount of underlying white matter to insure the complete removal of all the cortical cells. The scalp wound was closed with horse-hair sutures and covered with borated cotton held in position by collodion. The wound healed by first intention, and but slight and transient paresis resulted. The animals were killed in from ten to thirty-five days, the brains and cords hardened in Müller's fluid and stained by the Marchi method.

The hallux centre was localized at the middle of the triangular space at the upper extremity of the ascending frontal convolution formed by the longitudinal fissure and the fissure of Rolando, and extending down the convolution to the posterior extremity of the superior frontal sulcus. Microscopic examination showed a considerable degeneration of association fibres, both coarse and fine. Many of these were traceable to distant parts of the brain, as, for example, to the paracentral lobule, the precuneus and the gyrus fornicatus. Some degenerated fibres were also found crossing in the corpus callosum; others could be traced into the convolutions of the right hemisphere, corresponding to the distribution of the degeneration in the left. Of the fibres going to deeper levels, both the fine and coarse were to be traced through the mesial half of the centrum semiovale to the left internal capsule, in the lower levels of which they were located in the middle third of the posterior limb. From the capsule most of the fine fibres were found to pass into the optic thalamus. In the left crus the degenerated fibres were evenly distributed over the middle third, and many passed from here into the substantia nigra. At the pyramidal decussation some fibres crossed and others did not; and the relations and extent of the degenerated areas remained practically unchanged through the cervical and dorsal cord. In the one case examined at the level of the third sacral root the degeneration had not entirely disappeared.

To destroy the thumb centre the portion of cortex removed was from the ascending parietal convolution between the lower extremity of the intra-parietal sulcus, and the fissure of Rolando, and a little above the inferior genu of the fissure of Rolando (Beevor and Horsley). In these cases most of the degenerated association fibres passed to the ascending frontal and ascending parietal convolutions, rather more to the latter than to the former. As in the hallux lesions degenerated fibres were traceable to various convolutions at long distances from the point of destruction in the same side of the brain, and also to the opposite hemisphere, their distribution there corresponding closely to that in the left hemisphere. The fibres passing downward through the centrum semiovale were found to be more scattered and the area of degeneration greater than in hallux lesions. The coarse and fine fibres, except in one instance, were indiscriminately mixed in this passage through the white matter. In that case, however, there was an apparent separation, with the coarser fibres anterior to the finer. The same arrangement prevailed in the inner capsule, the coarser, representing the pyramidal fibres, being found in the middle third of the posterior limb, while the fine fibres, mostly representing the corona radiata thalami, were largely situated in the posterior third of the posterior limb. Coarse degeneration, mixed with more or less fine, was found in the middle third of the crus. A large proportion of the degeneration passed to the substantia nigra. In the three cases in which the degeneration reached the cervical cord, its amount and relations remained unchanged in the upper and middle cervical regions. From the level of the seventh cervical root downward the degenerated fibres steadily disappeared, and were entirely lost at the level of the third dorsal root.

To determine the degeneration resulting from minute lesions within the facial area seven successful experiments were performed. In four of these the portion of cortex removed was just above the fissure of Sylvius, and immediately anterior to the plane of the fissure of Rolando, representing the movement of opening the mouth straight. By varying slightly the position of the lesion, the movement elicited on stimulation was, in one case, pursing the mouth toward the opposite side, in another, rhythmical movements of mastication; in still a third experiment, stimulation led to an elevation of the opposite angle of the mouth.

In these cases, a variety of degenerations were found post-mortem, for a detailed description of which we would refer the reader to the original article. As in the experiments already described, there was considerable degeneration of association fibres, both near the point of lesion and also at a distance. In all the lesions on the border of the fissure of Sylvius, anterior to the fissure of Rolando, most of the degeneration was found in the ascending frontal convolution from the border of the fissure of Sylvius to the level of the inferior genu of the fissure of Rolando. As before, fibres were found crossing in the corpus callosum, both of the coarse and fine variety. In most of the cases but little of the degeneration passing from the lesion to the left internal capsule appeared in the centrum semiovale, since it reached the capsule by passing over and around the anterior angle of the putamen at a lower level. In all the lesions of the facial area, the degenerations in the uppermost layers of the capsule were situated in its anterior portion, and in the lower levels moved backward till they occupied the middle third of the posterior limb. Many fibres passed into the thalamus from the internal capsule, others were traceable to the facial nuclei, and to the motor nuclei of the glosso-pharyngeus and vagus on both sides, the majority crossing the raphe to reach the nucleus on the opposite side.

Dr. Mellus summarizes his conclusions as follows:

> Attention is called to the fact that the distribution of the degenerate association fibres in the thumb lesions corresponded with the measurements made by Bevan Lewis of the corpuscles of the fourth layer of the cortex in this region, that is, that coarse fibres were distributed to the upper part of the motor area and fine fibres to the lower part. In four of the experiments (one thumb and three facial) neither pyramidal fibres nor fibres connecting the nuclei of the cranial nerves directly with the cortex were found to have degenerated. Yet in each of these cases the characteristic movement was obtained from stimulation of the area removed quite as readily as in any other case. The degenerate fibres passing through the internal capsule in these cases apparently belong to two distinct systems, which are also more or less represented in the other experiments. One of these, composed almost entirely of fine fibres, passes from the posterior limb of the internal capsule into the outer surface of the optic thalamus, and represents the corona radiata thalami. These fibres are to some extent mixed with the pyramidal fibres in the posterior limb of the internal capsule, but are mostly situated in the posterior third, and, as they pass from there into the thalamus, make room for the entrance of the sensory (non-excitable) tract. The other of the two systems referred to, largely composed of coarser fibres, passes through the internal capsule into the crus, and apparently ends in the substantia nigra. These fibres are of much the same calibre, and apparently occupy the same position in the internal capsule and crus as the true pyramidal fibres. Both these tracts appear to arise in all portions of the motor cortex coming within the range of these experiments. All the degenerated pyramidal fibres from the hallux and thumb lesions were found to enter the capsule at or near the posterior extremity, while the corresponding fibres from the facial lesions entered the capsule at or near the anterior extremity, and the former were displaced forward and the latter backward until in the lower levels of the capsule they all found a place in the middle third of the posterior limb. It is also shown that a line can be drawn from the fissure of Sylvius upward, so dividing the motor area into two parts, that all the facial lesions from which fibres enter the anterior portion of the capsule would be in the anterior division, and all the hallux and thumb lesions from which fibres enter the posterior portion of the capsule would be in the posterior division. In the movement of the facial fibres backward between the upper and lower levels of the capsule they would necessarily, at some level, envelope the genu, which would account for the fact that they have always been described as occupying that position. The location of these degenerations in the internal capsule corresponds very closely with the results of excitation of the fibres in the living animal of the same species (Beevor and Horsley). In all the cases in which there was coarse degeneration in the internal capsule it was, with two exceptions (both hallux cases) grouped on the outer edge of the capsule. Attention is called to the fact that a large proportion of the coarser fibres passing down through the capsule enter the substantia nigra, and these experiments show this tract to be nearly or quite as large as that passing down into the pyramid. These are apparently fibres which have been looked upon as pyramidal, and, as the "pyramidal tract" has been shown to be even more extensive in the medulla and below the decussation than in the internal capsule, it follows that the fibres passing to the substantia nigra are probably replaced by others arising at lower levels. These degenerations show that in the monkey the facial fibres are situated in the middle third of the crus, in which they are mingled with the fibres of the pyramid, and that they do not occupy a space by themselves mesial to the pyramid.

It is a matter of regret that beyond the mere fact of the method used, no details are given, in the abstract before us, of the technique of determining degenerations often of so slight a degree in parts of the brain distant from the point of lesion. The mere mechanical difficulties of such an undertaking are exceedingly great, and especially so if the method of serial sections be employed.

Valuable as the work as a whole is, we should attach especial weight to the painstaking study of the cortical association fibres. All our modern knowledge tends to demonstrate the functional importance of these fibres, but hitherto our methods have been too crude to admit of anything approaching exactitude in tracing their course and destinations. The use of the comparatively recent method known, from its originator, as the Marchi method, has, in the hands of Dr. Mellus led to anatomical results of surprising delicacy. We may look, with a fair degree of confidence for future work in this field which will do, at least, something toward clearing up our altogether hazy notions of the intimate relations between convolutions, lobes and hemispheres. That such confidence is justified Dr. Mellus' careful investigation goes far to demonstrate.

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THE INFLUENZA BACILLUS AND ABSCESS OF THE LUNG.

As is well known, the influenza bacillus of Pfeiffer is regarded by those who believe in its etiological relation to influenza, to be also the cause of the pneumonia which in certain cases follows this disease. Whether it may also be capable of causing abscess-formation is an interesting question.

The following case reported by Hitzig,[1] of influenza-pneumonia followed by unmistakable signs of abscess of the lung, in which Pfeiffer's bacillus was the only organism found in the sputum, is of extreme interest in this connection. The attack of pneumonia occurred during an influenza epidemic, and the clinical picture was that of influenza-pneumonia. In the sputum, at the time the physical signs of the abscess were present, were found numerous round cells, elastic fibres, alveolar epithelium and hematoidin crystals. No tubercle bacilli were found.

The bacteriological examination of the sputum was conducted in the following manner: After thorough disinfection of the mouth and throat the patient expectorated into a sterile Petri dish. The central portion, as nearly as possible of the ball of sputum was then seized with a pair of sterile forceps, and thoroughly shaken up in three separate glasses of sterile bouillon. The ball of sputum, having been thus cleansed, was then examined by the microscope directly and in the dried preparation, after staining with weak carbol-fuchsin solutions or by the method of Gram. A few masses of bacilli were found, the bacilli being of very small size with rounded ends, here and there in pairs, but never showing chain-formation. Staining by Gram's method was easy, by carbol-fuchsin rather slow. A few bacilli were found within the white blood-corpuscles, but they were mostly extra-cellular.

Cultures from the sputum were made upon agar, glycerine-agar, gelatine and bouillon. The bouillon and gelatine cultures remained sterile, except in one tube where an indeterminate organism grew, the appearance of which was believed to be due to contamination.

The agar and glycerine-agar cultures showed, after remaining for twenty-four hours in the incubator at 38° C., a scanty growth of single, small, translucent colonies, visible for the most part only with the aid of a lens, which proved to be pure cultures of a bacillus corresponding in character to the one above described as found in the dried preparation. These organisms could not be further cultivated on agar, glycerine-agar, gelatine or bouillon, although numerous trials were made; but rapid and luxuriant growth took place on agar upon which blood-serum had been smeared. In twenty-four hours thick, transparent colonies appeared, a little larger than those described above, and showing on microscopic examination the same bacilli.

As the bacillus present in this case was found to correspond in its principal characteristics with the influenza bacillus of Pfeiffer, two fresh serum-agar cultures, with corresponding cover-slips, were sent to Professor Pfeiffer, in Berlin. They were examined in his absence by Dr. Kolle, his assistant, and found to be cultures of the influenza bacillus.

In favor of the etiological relation between Pfeiffer's bacillus and this abscess we have the absence of streptococci, staphylococci and capsule diplococci in the numerous cultures and cover-slips examined; and the fact that Pfeiffer's bacillus was constantly and almost invariably present.

In the presence of the fact, however, that in this case no anatomico-pathological data are forthcoming, and that the case is the only one on record in which bacteriological examination has given this result, we cannot yet be sure that to the influenza bacillus was due the abscess of the lung.

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MEDICAL NOTES.

Schede succeeds Trendelenburg.— Professor Schede has been chosen to succeed Trendelenburg as Professor of Surgery at Bonn.

The Tri-State Medical Society.— The Seventh Annual Meeting of the Tri-State Medical Society of Alabama, Georgia and Tennessee will be held in Chattanooga, Tuesday, Wednesday and Thursday, October 8th, 9th and 10th. Dr. Frank Trester Smith, Secretary.

The Library of Professor Ludwig.— Professor Ludwig's library at Leipsic, is for sale. A catalogue will be sent to any one who sends a written request. A collection comprising 10,000 scientific papers and memoirs is offered at 6,000 marks. The books will be sold separately.

The Metric System in Great Britain. — The metric system of weights and measures will be adopted in the next issue of the British Pharmacopœia.

The German Society of Naturalists and Physicians.— This association is now in session at Lubeck, Professor Wiliscenus of Leipsic and von

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[1] Münchener med. Woch., 1895, No. 35.

Ziemssen of Munich are the presiding officers. Among the medical communications are a report of Professor Behring on sero-therapy, a paper by Rieche of Jena on cerebral surgery, and a discourse by Rindfleisch of Würzburg on neo-vitalism.

An Adequate Characterization. — The *Cincinnati Medical Journal* publishes the following strong, but none the less just, denunciation of a so-called "vitapath," who was arrested and fined (by Judge Dustin of Cincinnati), for practising without a license. The judge, who was doubtless actuated by the fact that a man was known to have recently died without medical attention other than that of the prisoner, said, in pronouncing sentence: "Men who knowingly go into a sick-room and prevent anything being done for a dying man by silly incantations and laying on of hands, are responsible for his death, and ought to be on a par with a murderer in the eyes of the law. God help the dying man who relies upon you or any of the so-called graduates of quackery. You speak of vitapathy being of a higher power than medicine, and you say you ordain ministers at the same time you matriculate vitapathic physicians. Your methods are an insult to intelligence, their practice is a criminal abuse of ignorance, and your college a disgrace to civilization."

A Parisian Remedy. — A Parisian physician is said to have prescribed a nightly dose of infusion of fig leaves for a patient whose dreams were peopled by visions of naked women.

A Medical Poet of Finland.— In Finland there is a country doctor, says *Le Progrès Médical*, who has been termed the "Christopher Columbus" of Finnish poetry. His name is Elias Loenrot, and he is the man who has revived the work of the ancient bards of his country in his "Kalevala," an epic poem which is said by those who have read it to rank with the Iliad and Odyssey.

NEW ENGLAND.

Acute Infectious Diseases in Boston. — During week ending at noon, September 18, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 91, scarlet fever 18, measles 8, typhoid fever 42.

Diphtheria in Beverly. — It is reported that several cases of diphtheria have appeared among the school-children of Beverly, Mass.

The Carney Hospital in Need. — A meeting of citizens interested in the Carney Hospital at South Boston was held last week at the Parker House, with the object of devising means of raising money for the running expenses of the institution. It was announced that the hospital already owed $10,000 in bills for necessaries, and that the annual outlay for free patients is $30,000 more than the income. Dr. W. N. Bullard, of the staff of visiting physicians, said that if its friends did not pay the running expenses, the hospital must raise money by some means or it would be compelled to refuse the poor. A statement in the hands of the meeting, showed that in the last year more patients were treated and more operations performed than in any year previous. The total number treated was 2,201, an increase of 152 over the previous year; and of this number 1,359 were treated gratuitously. In the out-patient department there was a corresponding increase. The expenses of conducting the hospital had been considerably enlarged, about $110 a day being necessary. The hospital has no endowment, and is dependent on voluntary gifts.

The Training-School for Nurses at Long Island.— The training-school for nurse attendants to which editorial reference was made in our number of July 25th, was opened on August 21st, at the City of Boston Almshouse and Hospital, Long Island. The course is to last one year, and the training embraces medical, surgical, maternity and infant nursing. Miss Elizabeth A. McPhail, a graduate of the training-school for nurses in connection with the Massachusetts General Hospital, has been appointed to the position of superintendent. Instruction is given by means of lectures and recitations, as well as teaching at the bedside. A course of six months in ward management, hospital house-keeping, and administrative work is open to graduate nurses from any organized training-school. A diploma will be given on a satisfactory fulfilment of the requirements of the course, and the passing of an examination which will be required at its termination.

NEW YORK.

Bequest to the New York Post-Graduate Medical School and Hospital. — The New York Post-Graduate Medical School and Hospital has received a gift of $5,000 from the estate of the late Henry M. Cram. The bequest was made by Mr. Cram in memory of his wife, who was for many years identified with the charitable work of the institution.

Punishment Fit for the Crime. — The health authorities have of late been proceeding with great vigor in the prosecution of fraudulent milk-dealers, and for the first time those found guilty of adulteration have been sentenced to imprisonment, as well as the payment of fines. As a result, it has been found that the sale of impure milk has almost entirely ceased in the city.

The Walker Memorial Hall. — Dr. Henry F. Walker, of New York, who was for many years associated in practice with Dr. T. Gaillard Thomas, has presented his native town, Pittsford, Vt., with a handsome building, to be known as Walker Memorial Hall, in memory of his parents, the Rev. Dr. Charles Walker and wife; and the dedication services were held on September 11th. Addresses were made by Dr. Walker, his brother Rev. George Leon Walker, of Hartford, the Rev. Dr. George A. Boardman, and others. The building is to be mainly occupied by the MacClure Circulating Library, which was founded nearly a century ago. Dr. Walker, besides being the donor of Walker Memorial Hall, has furnished Pittsford with an excellent system of water-works and sewerage.

A RACE COURSE BECOMES A RESERVOIR. — Work has just been commenced on the enormous new reservoir for Croton water at Jerome Park, the former race course. It will have an area many times larger than any of the present reservoirs, and will cost several million dollars.

AN UNSEASONABLE DEATH FROM HEAT-STROKE. — Probably the last death from sunstroke for the present season occurred on September 14th at the Hudson Street Branch of the New York Hospital. The patient, who was a grocery clerk thirty-six years of age, was admitted to the hospital on the morning of September 13th, the last day of the recent period of extreme heat. His temperature was then 110°, and he never rallied from the attack.

SUICIDE OF DR. LYON. — Dr. David Stewart Lyon committed suicide on September 11th at Lake Mohausie, near Peekskill, where he had been ill for several weeks. Dr. Lyon was born in New York in 1839, and was graduated from the Medical Department of the University of the City of New York. After receiving his degree he served for some time at the New York Hospital, and then went to North Carolina. He finally located in Florida, and was at one time Vice-President of the Florida State Medical Association. It is stated that he had of late been a confirmed victim of the morphia habit.

BROOKLYN'S DEATH-RATE DECREASES. — During the week ending September 14th, 454 deaths were reported in the city of Brooklyn, against 474 during the preceding week; the death-rate being 21.3 per thousand. There was a marked decrease in the deaths from diphtheria.

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Miscellany.

THE DEAN OF NORWICH ON DOCTORS' BILLS.[1]

IT is always pleasant to find the profession to which we belong properly and justly appreciated by those outside its bounds; perhaps all the more pleasant from the infrequency with which such appreciation is expressed. We therefore thank the Dean of Norwich for the kind eulogy of the medical profession which he introduced into his sermon at the cathedral on Hospital Sunday. His remarks concerning doctors' bills should be widely read, for they deserve the attention of many whose position in the world is undisputed, who stand well with their neighbors, and are looked on as honest men, but nevertheless relegate the payment of their doctors' bills to the dim and distant future. The dean is reported as having said:

"Nor can I, nor shall I, be silent about the wrongs to which scores of medical men are subject. I refer to the startling contrast there is between the inexorable demands which society makes on medical men and the elasticity of the social conscience with respect to their remuneration. I have known cases where men are summoned, at all hours, and at all seasons of the year. Their bills are presented with timidity, if not anxiety, and they are received sometimes with amazement, sometimes with indignation, and sometimes relegated to oblivion. Nor are cases unknown where the righteous demand for work done is met by calling in another practitioner, he in turn to suffer as his brother did before him. I cannot permit myself to imagine that I address any such wrongdoer here to-day. But if I do, then, in my Master's name, I entreat you to remember that the medical men of this nation are the highest type of their class in the world; they are entrusted with the secrets of domestic life; they have all our liabilities, with the special liabilities of their order; they frequently die as martyrs to science, to suffering, to sympathy, to destitution. . . . Believing this, my plea is that every unpaid medical bill be discharged generously, gratefully, cheerfully, and that whatever account must be deferred in payment, the last to be deferred is the account of him who is the human agent who has brought us into the world, enables us to continue our work in life, and many a time lays down his own in endeavoring to baffle death."

How much more comfortable would be the life of many a hard-working practitioner if his patients would but act up to the duty so eloquently taught.

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HYSTERIA IN THE MALE.

DR. N. P. DANDRIDGE, in a recent number of the *Cincinnati Lancet-Clinic*, gives an interesting account of certain cases of hysteria in the male which have come under his observation. He recognizes the fact that the disease is more rarely seen in men than in women, but in the male the disease usually presents itself in one of the milder forms, and such manifestations as the contractions, the vomiting, the hystero-epilepsy rarely occur. In his experience the disease has approached the type found in neurasthenia, and has been due to overwork, intense application, or overpowering anxiety.

As an example is cited the case of a self-reliant and successful business man who broke down under the strain of a crisis of great importance in his affairs. The crisis was successfully passed; but as soon as it was over, he was overwhelmed with an attack of apprehension and fancied pain, with chills and gasping for breath.

A night's rest under the influence of a Dover's powder restored him to health and self-control. It should be stated that he was of a decidedly neurotic temperament, an excessive user of the strongest tobacco, and at times had depended largely on stimulants to keep him at his work, and on chloral and other anodynes to procure sleep. The attack of hysteria above described was the only one he is known to have had.

A second case, that of an army engineer who had become morbidly anxious about an investigation into a faulty piece of work, also recovered under a simple anodyne. The recovery, however, was far from permanent, as it finally proved to be the forerunner of dementia and death, which followed it in two and six months respectively.

A third case was that of a man of about thirty, filling a responsible business position, well possessed, self-reliant, and free from bad habits. On becoming engaged to be married he broke down completely with apprehension lest he should be unable to fulfil his marriage relations. He was subject to fits of weeping, and utterly lost his self-control. For a year's time he subjected himself to treatment by various specialists, travelled, and was kept from all business. He finally recovered, was married and became the father of a family.

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[1] British Medical Journal.

Dr. Dandridge asks: "Is there in such a case some hidden and unconfessed experience, which remains concealed, and which is the cause of this want of mental and moral balance? And is such a mind likely, under some future strain, to become more permanently unhinged and unbalanced? Some of these cases, I believe, have their real origin in fancied sexual incompetency."

Another phase of hysteria is shown in the case of a successful professional man who became so alarmed lest a sore on his nose should prove to be a cancer, that he lost his self-control, became sleepless, and wandered about aimlessly, asking advice of everybody. Hard work and continuous exertion in hunting would temporarily bring this man back to his normal condition.

The detailed description of these cases given by Dr. Dandridge is of marked interest, and will repay perusal. His statement that some of these cases have their origin in fancied sexual incompetency is to the point. Any experience, no matter how short, in the daily run of cases at a genito-urinary clinic, will suggest to the attending surgeon the query whether the numerous cases of fancied sexual incompetency do not after all indicate a much greater frequency of hysteria in the male than is ordinarily stated. The advertisements in the newspapers and pamphlets scattered broadcast over the country, of cures for "loss of manhood," "seminal emissions," etc., certainly are responsible for a considerable amount of neurasthenia in the male. For example, a patient at one of our genito-urinary clinics in Boston, who complained that he had seminal emissions once a week, on being told that they did him no harm answered that he knew they weakened his brain. He was informed that the weakness of the brain was the cause, not the result, of the harm done him by his emissions, which hardly seemed to satisfy him.

Dr. Dandridge states, with regard to the treatment of hysteria in man, that it is less frequent than in women, dependent on anemia and want of proper nourishment, and therefore the question of a sufficiency of nourishing food is not so important and so hard a difficulty to meet. In those cases, however, where excessive use of stimulants and anodynes or narcotics have been indulged in, proper feeding is of extreme importance, in order to place the individual in a position to combat the cravings to which he has yielded. Massage, especially in connection with Turkish baths, will often have a happy effect, but prolonged rest in bed is not, in my experience, of frequent benefit. Relief from the anxiety of wearing and anxious duties, combined with prolonged and even severe out-of-door exercise, is more likely to restore the true and healthy condition of mind and body than anything else. The ability to take rational and refreshing sleep is usually the first step towards improvement.

METEOROLOGICAL RECORD,

For the week ending September 7th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 1	30.02	66	73	58	49	48	48	N.W.	N.	12	5	C.	C.	.35
M.. 2	30.03	61	71	57	53	53	53	N.W.	W.	4	9	F.	C.	
T.. 3	30.03	66	79	54	59	60	60	W.	S.W.	7	15	C.	C.	
W.. 4	30.06	73	84	62	75	76	76	W.	S.	10	12	C.	C.	
T.. 5	30.14	72	82	63	84	70	77	W.	S.W.	12	10	O.	O.	
F.. 6	30.13	68	74	62	71	97	84	N.W.	E.	4	4	C.	C.	
S... 7	30.12	63	66	60	91	87	89	N.	N.E.	13	9	O.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 7, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,956,000	735	356	24.64	12.46	14.84	1.12	4.06
Chicago . . .	1,600,000	—	—	—	—	—	—	—
Philadelphia .	1,139,457	—	—	—	—	—	—	—
Brooklyn . .	1,043,000	439	238	31.05	11.73	19.78	1.84	6.75
St. Louis . . .	540,000	—	—	—	—	—	—	—
Boston . . .	494,205	197	84	27.54	9.69	16.32	8.57	5.61
Baltimore . .	500,000	—	—	—	—	—	—	—
Cincinnati . .	325,000	79	31	17.64	7.56	8.82	2.52	3.78
Cleveland . .	325,000	109	62	6.44	4.60	2.76	—	3.68
Washington .	285,000	95	46	30.45	7.35	12.60	10.50	1.05
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	31	13	29.07	25.84	22.61	—	—
Charleston . .	65,165	42	11	21.42	19.04	19.04	2.38	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	27	15	33.33	11.10	18.50	—	14.80
Fall River . .	88,020	30	17	39.96	10.00	29.97	6.66	—
Lowell . . .	84,359	40	20	32.50	5.00	30.00	—	2.50
Cambridge . .	81,519	26	15	42.35	23.10	7.70	—	7.70
Lynn	62,355	24	9	33.28	8.32	12.48	4.16	—
New Bedford .	55,254	18	9	16.66	5.55	11.11	5.55	—
Springfield . .	51,534	21	12	47.61	14.28	42.84	—	—
Lawrence . .	52,153	12	7	33.33	—	8.33	—	—
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	11	3	18.18	9.09	18.18	—	—
Brockton . .	33,157	10	0	30.00	20.00	20.00	10.00	—
Haverhill . .	30,185	10	5	20.00	10.00	20.00	—	—
Malden . . .	29,706	7	2	28.56	14.28	28.56	—	—
Chelsea . . .	31,295	10	5	20.00	20.00	—	—	10.00
Fitchburg . .	26,394	8	4	37.00	12.50	37.00	—	—
Newton . . .	27,622	9	3	—	—	—	—	—
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	9	4	11.11	—	—	11.11	—
Waltham . .	20,877	7	3	28.56	—	—	28.56	—
Quincy . . .	20,712	8	3	12.50	25.00	12.50	—	—
Pittsfield . .	20,447	5	2	80.00	40.00	80.00	—	—
Everett . . .	18,578	6	5	16.66	—	16.66	—	—
Northampton .	16,738	—	—	—	—	—	—	—
Newburyport .	14,554	5	0	16.66	16.66	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,139; under five years of age 1,014; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 545, consumption 233, acute lung diseases 151, diarrheal diseases 353, diphtheria and croup 85, typhoid fever 43, whooping-cough 29, cerebro-spinal meningitis 11, malarial fever 11, measles 9, scarlet fever 9, erysipelas 5.

From whooping-cough New York 13, Brooklyn 9, Washington and Cincinnati 2 each, Boston, Providence and Lawrence 1 each. From cerebro spinal meningitis New York 5; Lynn 2, Brooklyn, Lawrence, Springfield and Chelsea 1 each. From malarial fever Washington 4, Brooklyn 3, New York 2, Boston and Nashville 1 each. From measles New York 5, Brooklyn 2, Washington and Lawrence 1 each. From scarlet fever New York 4, Brooklyn, Boston, Nashville and Worcester 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending August 31st, the death-rate was 19.9. Deaths reported 4,042; acute diseases of the respiratory organs (London) 102, diarrhea 762, measles 99, whooping-cough 65, diphtheria 56, scarlet fever 43, fever 40, small-pox (London 4, Oldham and Preston 1 each) 6.

The death-rates ranged from 14.2 in Bristol to 35.6 in Burnley: Birmingham 17.1, Bradford 23.5, Brighton 22.2, Gateshead 23.9, Croydon 17.2, Leeds 19.6, Leicester 16.1, Liverpool 29.3, London 15.9, Manchester 25.1, Newcastle-on-Tyne 22.7, Nottingham 18.4, Sheffield 25.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 7, 1895, TO SEPTEMBER 13, 1895.

So much of S. O. 202, A. G. O., August 29, 1895, as relieves **First-Lieut. Charles E. B. Flagg**, assistant surgeon, from duty at Angel Island, Cal., and assigns him to duty at Fort Hancock, Texas, is revoked.

Upon the abandonment of Fort Buford, North Dakota, **Captain Edward C. Carter**, assistant surgeon, will report for duty at Fort Harrison, Montana.

First-Lieut. Charles F. Kieffer, assistant surgeon, when his services are no longer needed at Fort Buford, will be relieved from duty at that post and will report for duty at Fort Omaha, Nebraska.

So much of the order as directs **First-Lieut. Francis A. Winter**, assistant surgeon, on being relieved from duty at Fort Hancock, Texas, by **First-Lieut. Flagg**, to report for duty at Fort Grant, Arizona, is amended to direct him to so report upon the abandonment of Fort Hancock.

So much of S. O. 112, A. G. O., May 13, 1895, as directs **Captain Charles Richard**, assistant surgeon, to take station at St. Louis, Mo., for duty as attending surgeon and examiner of recruits, in that city, is revoked, and upon the expiration of his present leave of absence, he is ordered to Fort Brady, Michigan, for duty, relieving **Captain William B. Davis**, assistant surgeon.

Captain Davis, on being thus relieved, will proceed to and take station in New York City, for duty as attending surgeon and examiner of recruits, relieving **Captain William H. Corbusier**, assistant surgeon.

Captain Corbusier, on being thus relieved, is ordered to Fort Monroe, Virginia, for duty at that post.

Captain William W. Gray, assistant surgeon, upon the expiration of his present leave of absence, will be relieved from duty at Fort Schuyler, New York, and ordered to Philadelphia, Penn., for duty as attending surgeon and examiner of recruits in that city, relieving **Captain Samuel Q. Robinson**, assistant surgeon.

Captain Robinson, on being thus relieved, is ordered to Fort Reno, Oklahoma, for duty, relieving **Major William H. Gardner**, surgeon.

Major Gardner, on being thus relieved, is ordered to Fort Thomas, Kentucky, for duty, relieving **Major James C. Worthington**, surgeon.

Major James C. Worthington, surgeon, on being relieved from duty at Fort Thomas, Kentucky, is ordered to Vancouver Barracks, Washington, for duty, relieving **Captain William Stephenson**, assistant surgeon.

Captain Stephenson, on being thus relieved, is ordered to the Presidio of San Francisco, Cal., for duty at that post.

The following named officers will report in person on Monday, September 23, 1895, to **Colonel Charles H. Alden**, assistant surgeon-general, president of the examining board, appointed to meet in this city, for examination as to their fitness for promotion: **Captain Louis S. Tesson**, assistant surgeon; **Captain William H. Corbusier**, assistant surgeon; **Captain Daniel M. Appel**, assistant surgeon; **Captain Samuel Q. Robinson**, assistant surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 14, 1895.

J. L. Neilson, surgeon, detached from the U. S. Receiving-ship "Wabash" and to the U. S. S. "Maine."

V. C. B. Means, passed assistant surgeon, from Naval Hospital, New York, and to the U. S. S. "Maine."

T. W. Richards, assistant surgeon, from the U. S. Receiving-ship "Minnesota" and to the U. S. S. "Maine."

D. O. Lewis, surgeon, detached from the U. S. S. "Mohican" and to the U. S. S. "Marion."

J. E. Page, passed assistant surgeon, from the U. S. S. "Philadelphia" and to the Mare Island Hospital.

R. K. Smith, assistant surgeon, from the U. S. Receiving-ship "Vermont" and to the U. S. S. "Philadelphia."

A. L. Gihon, medical director, detached from the Naval Hospital, Washington, D. C., and placed on Retired List, September 28th.

Geo. A. Bright, medical inspector, detached from the Navy Yard, New York, and to Naval Hospital, Washington, D. C.

A. F. Price, medical inspector, detached from Torpedo Station and to the New York Navy Yard.

B. F. Stephenson, surgeon, from the Marine Rendezvous, Boston, and to the U. S. Receiving-ship "Wabash."

J. F. Urie, passed assistant surgeon, ordered to the Marine Rendezvous, Boston, Mass.

J. M. Steele, surgeon, detached from Marine Rendezvous, New York, and to the Torpedo Station, Newport.

L. G. Heneberger, surgeon, ordered to Marine Rendezvous, New York, in addition to present duties.

J. H. Moore, assistant surgeon, detached from the U. S. S. "Atlanta" and ordered to the U. S. Training-ship "Constellation."

Philip Leach, passed assistant surgeon, ordered to the Naval Hospital, New York.

APPOINTMENTS.

Drs. Joel E. Goldthwaite and **John Dane** have been appointed visiting surgeons to the Marcella Street Home.

SOCIETY NOTICE.

American Orthopedic Association. — The ninth annual meeting will be held at Chicago, September 17, 18 and 19, 1895.

By the courtesy of Mr. H. J. Furber the meeting will be held in room 709 Columbus Memorial Building, 103 State Street.

There will be a morning session each day commencing at nine o'clock, and an afternoon session on Tuesday, and if necessary on Thursday at two o'clock.

The first executive session will be at noon on Tuesday, and the last at noon on Thursday.

Dr. F. S. Coolidge will receive the members and guests of the Association at his residence, 2636 Prairie Avenue, on Tuesday evening from eight to eleven o'clock.

On Wednesday, upon adjournment, the members will be the guests of the Chicago Orthopedic Society for an excursion to the Drainage Canal. A light luncheon will be served on the train. In the evening the annual dinner will be served at 7.30 o'clock at the Chicago Club, Michigan Avenue and Van Buren Street. The usual charge of five dollars will be made, and members should send their checks at once to the Treasurer and signify their intention of being present.

On Thursday, after the adjournment of the Executive Session, if there should be no necessity of an afternoon session, the members will be the guests of the Chicago Orthopedic Society, for luncheon at Lincoln Park Beach, on the north shore and for a drive.

John Ridlon, M.D., *President*.
Royal Whitman, M.D., *Secretary*.

RECENT DEATH.

Lemuel Dickerman, M.D., of Foxboro, Mass., August 14th, aged sixty-nine. He was born at Brattleboro, Vt., January 4, 1826. Following in the steps of his father and grandfather, he early chose the medical profession for his life work. After graduation at the Vermont Academy of Medicine, Castleton, Vt., in 1845, he spent a year in practice with Dr. James Lewis in Boston. He then took up his residence at Medfield, Mass., where he remained seven years. From there he removed to Foxboro, where he has been in active practice for forty-two years. He was so devoted to his work that he is said to have taken only one month's vacation in forty-two years. He was beloved and respected in the community in which his life-work was done.

BOOKS AND PAMPHLETS RECEIVED.

State Boards of Medical Examiners *vs.* Medical Colleges. Reprint. 1895.

Herniotomy — Osteotomy. By Samuel E. Milliken, M.D., New York. Reprint. 1895.

The Bryson Symptom in Exophthalmic Goitre. Hypnotism at Nancy. The Combination of Hysteria and Organic Disease. By Hugh T. Patrick, M.D. Reprints. 1895.

Black on the Urine; The Urine in Health and Disease, and Urinary Analysis, Physiologically and Pathologically Considered. By D. Campbell Black, M.D., L.R.C.S., Professor of Physiology, Anderson College Medical School. Philadelphia: Lea Brothers & Co. 1895.

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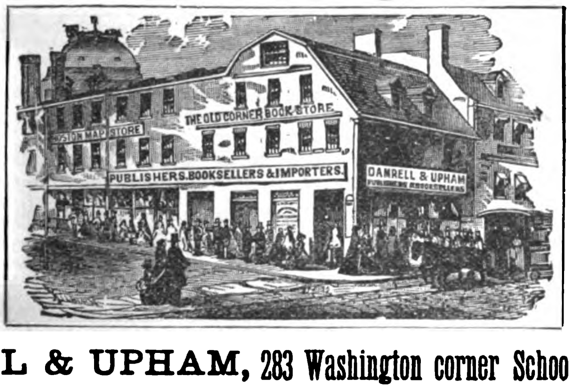
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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum.......... 2
Albany Medical College...... 18
Antikamnia Chemical Company...Antikamnia 30
Apollinaris Co.......... 14
Baker, L. W., M.D.... ......Riverview 19
Baker, Dr. W. H ....Card 19
Battle & Co. ....Bromidia 4
Bellevue Hosp. Med. Col..... Sessions of '94-95 16
B. H. R. Distilling Co.......... 29
Boehringer & Soehne..........Ferratin 3
Borine Chemical Co.......... 7, 18
Bowdoin College..........Medical Department 16
Bowker, Dr. E. M.......... ......Vaccine Virus 25
Boylston Medical Prize Questions.......... 2
Breitenbach Co., M. J..........Pepto-Mangan 4
Castle, W. & Co..........Steam Sterilizer 6
Channing, Dr. Walter.......... 19
Chauncy Hall School.......... 31
Cocke, Dr. James R.......... 19
Codman & Shurtleff......Surgical Instruments 12
Coll. of Physicians and Surgeons, Boston... 16
Coll. Physicians and Surgeons, Baltimore, 16
Columbian University.......... ... 16
Crittenton, C. N....Liquid Beef Tonic, etc. 5, 13, 18
Cutter, Dr. W. P.......... 19
Dartmouth College, N. H....Med. Department 16
Douglass, Dr. DeF ....Artificial Limbs 25
Farwell & Rhines..........Dyspepsia Flour 2
Feeble-Minded Youth, Inst. for..Barre, Mass. 19
Fisk & Arnold..........Artificial Limbs 25
Flood, Dr. Everett.......... 19
Fougera, E. & Co..........Imp'g Pharmacists 8, 9, 27
Gear, J. Frank..........Surgical Instruments 26
Goldthwaite, Dr. S. V.......... 19
Gould's Medical Dictionary.......... 28
Graham, Dr. Douglas......Treatise on Massage 26
Greene, Dr. E. M........Examinations of Sputa 19
Harvard Baby Food Co.......... 7
Harvard University........Dental Department 16
Harvard University.......Medical Department 32
House For Sale.......... 2
Johnson & Johnson..........Kola 22
Kingsbury, Dr. A. D..........Card 19
Lambert Pharmacal Co..........Listerine 24
Leedom, Charles..........Nuclein Solution 5
Lehn & Fink..........Mfg. Chemists 11
Lilly, Eli & Co..........Manfg. Chemists 13
Lloyd, Andrew J. & Co. .....Manufg. Opticians 2
Londonderry Lithia Water.......... 20
Long Island College Hospital.......... 16
Mackie, Dr. L. V. G. .... Sanitarium 19
Marks, A. A..........Artificial Limbs 6
Martin, Dr. F. C..........Vaccine Virus 31
Massachusetts Medical Society.......... 2
McElroy, P. J..........Glass Syringes 25
Medico-Chirurgical College.......... 16
Merrell, The Wm. S., Chemical Co.......... 14
Norton, Dr. Eben C........ ....Card 19
N. Y. Polyclinic and Hospital.......... 16
N. Y. Post-Graduate School and Hospital.. 17
Oakland Chemical Co.......Hydrogen Dioxide 12
Office To Let.......... 2
Pabst Brewing Co.......... 5
Patch, E. L. Co.......... .....Lithia Tablets 23
Peake & Buzzell..........Surgeons' Supplies 23
Phillips Chemical Co., The Charles H....... 1
Pinaud, Ed..........Sels Romains 22
Planten, H., & Son..........Capsules 25
Practice For Sale.......... 2
Purdue Frederick Co., The.......... 5
Ring, Dr. Allan Mott.........Nervous Diseases 19
Russell, Dr. F. W ....Card 19
Schulze-Berge & Koechl......Migranin, etc. 25, 31
Stedman, Dr. Henry R..........Card 19
Strong, Dr. S. E..........Sanitarium 21
Thayer, Henry & Co.......... 21
Theodore Metcalf Co..........Coca 10
Tufts College. 17
Twitchell, Dr. George B..........Card 19
Tyree, J. S. ....Antiseptic Powder 7
University of Maryland.......... 16
University of Vermont,.......... 17
Walker Pharmacal Co..........Phytoline 21
Walnut Lodge Hospital.......... 19
Warner, Wm. R., & Co.......... .Pills, etc. 15
Waterman, Dr. Thomas..Animal Vaccine Virus 2
Weeks & Potter Co. ....Quinona 30
Wheeler, Dr. T. B... ....Phosphates 21
White, Dr. Walter H..........Card 19
Willard, Dr. A. J..........Card 19
Woman's Hospital, Lowell.......... 19
Woman's Medical College, Baltimore....... 16
Woman's Med. Coll..of the New York Infirmary 16
Woodward, L. F. ....Stammering 19
Wool Oil Refining Co .... Wool Oil 6
Yale University..........Medical Department 16

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PAGE

ADDRESS.

ersonal Service as the Especial Exponent of a Great Profession. *By Henry O. Marcy, A.M., M.D., LL.D.* 309

ORIGINAL ARTICLES.

ttage Hospitals. *By Morrill Wyman, M.D.*, Cambridge, Mass. (Concluded) 313

w Legs. *By Frank E. Peckham, M.D.*, Providence, R. I. 317

ataract Operations between the Ages of Eighty and Ninety, with a Table of Cases. *By Hasket Derby, M.D* 319

CLINICAL DEPARTMENT.

Case of Cancer of the Urethra. *By A. F. Cabot, A.M., M.D.* 320

REPORTS OF SOCIETIES.

erican Laryngological Association. Seventeenth Annual Congress, Rochester, Y., June 17-19, 1895. (Concluded) 321

Tuberculosis of the Upper Air-Passages.—Discussion on Tuberculosis of the Upper Air-Passages.— Necrosis of the Middle Turbinate.— Congenital Osseous Occlusion of the Nares.— Relation of Vaso-Motor Disturbances to Diseases of the Upper Air-Tract.— The Cigarette Habit.

American Neurological Association. Twenty-First Annual Meeting, Boston, June 5, 6 and 7, 1895 324

First Day.— Hysterical Amblyopia and Amaurosis — Report of Five Cases Treated by Hypnotism.— A Case of Total Hysterical Anesthesia in the Male.

EDITORIALS.

The Law of Commitment of the Insane.... 326

Acne and the Seborrheic Condition 328

Medical Notes 329

Yellow Fever.— Wisconsin's Cholera Fund.— Brutal Enforcement of Quarantine Regulations.— A Supra-Renal Extract.— The Cost of a Medical Education in London. — An Army Medical Board.—The Shazada's Physician.

New England.

Acute Infectious Diseases in Boston.— Kingston Water-Supply.— The New McLean Hospital.

New York.

A New Antitoxin Plant.— A Death from Electricity.—Precautions against Cholera.— Opening of the New University Buildings.—Enlargement of the Naval Hospital.— Death of Dr. Nelson Isham.

CORRESPONDENCE.

Dr. Roswell Park's Speech before the Harvard Medical Alumni. *Thomas Dwight, M.D.*, Nahant. 331

MISCELLANY.

Medical Men and Medical Legislation..... 330

A Curious Anomaly 331

Record of Mortality, September 14, 1895... 331

Meteorological Record, September 14, 1895. 332

Army, Navy and Marine-Hospital Services. 332

Society Notice 332

John Collins Warren, LL.D 332

Recent Death 332

Books and Pamphlets Received 332

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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See pages 16, 17, 18 and 19.

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See Advertisement of

VINOLIA SOAP,

PAGE 4.

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BY HENRY O. MARCY, A.M., M.D., LL.D.

As we stand by the opening door of the twentieth century, we would gladly draw aside the curtain and forecast for present profit something which the experience of the coming decades will have in store.

To the graduates of to-day, how interesting the vision!

From henceforth life is seen by you through a new medium.

We have witnessed the ceremonies as interested spectators. *You* have approached the sacred altar and taken upon yourselves the vows to-day, which from this time, set you apart for a special service. From nothing, which the demands of an intelligent citizenship places upon her supreme rulers, are you exempt, but in addition have you openly accepted new duties, new obligations, which are fraught with the heaviest of responsibilities. Wedded to the profession of your deliberate choosing, it becomes our pleasing privilege to bestow the benediction, as you emerge from your faithful apprenticeship. To your beloved teachers these annual graduations are interesting occasions; but to you it is the culminating point in the life-history which has no repetition.

Do we, your elders, not remember it? Years, few or many, are not sufficient to intervene, which do not place us to-night upon a level of common interest and sympathy. New recruits in this great army, you have been given the countersign, and the query at once arises,

> What shall the service be?
> Of what shall it profit me,
> May I the future see
> Of success a certainty!

The parable of the talents, as given by the Great Master, may be read to-night in a new light, the law of self-interest governed by a new force. Life is a bank into which we make a daily deposit of service rendered to others, against the value of which we may freely draw, as our own, the entire credit for personal benefit.

If this is true, the acquisition of the means for deposit is the one subject of absorbing interest, for are we not agreed that personal needs are likely to continue very pressing and that educated men are expensive animals!

"How I may best serve others as the especial exponent of a great profession," might seem the fitting topic of the hour upon which to address you.

Is it that you are to treat the rank and file of suffering humanity as bad priests of the mother church give absolution to suppliants, who accept the same without thought of a regenerative life, and thus you dole out bitter potions of doubtful drugs in answer to "What shall I take for my cure?" rather than sit as the real high priest of our most noble calling and teach the violation of physical laws and the means of their harmonic dispensation!

Remember while you reverently profit by all the lessons of revealed religion, that you are the *more* rather than the *less*, the teacher of natural laws, which *you* read in the living light of the unerring repetition of the generations about you; that the physical, the mental and the moral are but phases of the one great vital force which we call life.

Until a recent period scientists thought that heat, light and electricity were independent forces. He who demonstrated that they were only different phases of one and the same great power, and gave to man the key of transposition, heralded a new age of progress, the foreshowing of which is beyond present estimate.

This day you are invested in the panoply of office which makes you the high priests of a trinity, the teaching of which has not been handed down through twenty centuries by a priesthood and subject to multiple error, but read in letters of living light in the life about you. May it be your mission to lay broad the foundations of right living, a properly-developed vitality in the race, making easy transposition of the same into mentality and morality, the spiritual efflorescence which stamps us as divine.

As we approach a new era, very naturally we ask ourselves, What has been the fruitage of the past? and has the century just lapsing into history added to the store of the world's wisdom which challenges a favorable comparison with earlier periods and upon which coming generations may look back with approval?

The year to come will be set apart for the proper commemoration of the first great medical discovery which heralded the dawn of the present century; the arrest by vaccination of that great plague, the small-pox, which for centuries had stalked unchecked throughout all lands, leaving its unburied dead by the thousands, as the harvest of its destruction. Scarcely less fortunate were those who survived its withering touch, since the maimed, the helpless and the blind were left in every hamlet, as life-long witnesses of the terrible scourge. To Edward Jenner belongs the immortal fame of having presented to mankind this boon, the value of which it is difficult even for us to estimate.

When some one great event crowns the life of an individual, it is often remarked, that, but for this, he would have remained unknown, and that it was a lucky accident which made him famous. Thus some general, by chance in command of veteran cohorts, wins a battle, when the fate of a nation hangs trembling in the balance, and the laurels of immortality are entwined about the brow of a world's hero. If it ever happens, it comes as the exception to prove the rule, that behind the opportunity lay the life-long preparation which fitted the seizure of the supreme moment, and under the guidance of such a training moulded the destiny of empires.

Since the days of the Cæsars, the world had never seen a military genius equal to that of the "Little Corporal," who, at this hundred-years' period, had suddenly sprung full-fledged into the arena of victorious battle; but a careful study of Napoleon's character teaches that, young as he was, he had been schooled in a life-long training of adverse circumstances which had moulded his iron character, and had given him the power of concentration of all his splendid faculties upon the one problem of the hour.

To every individual comes some time, the full testing of his powers, and then, if found wanting, he falls deservedly into the rear of the column in disgrace, and is rarely heard from again. In the phraseology of the Biblical writers, "God calls us, and, if we hear not his voice, woe betide us." Thus will come to you, my young friends, some day the voice; will you be ready to answer the summons? The Roman philosopher said, "Let the training of the youth be in that to which he is to devote himself in life-long pursuit."

---

[1] Delivered at the Annual Commencement of the College of Medicine of Syracuse University, June 6, 1895.

Let us pause for a moment, and see if Edward Jenner was a fitting example of the preparation which crowns a life with deserving success. Born in 1749, the son of a clergyman, with an elder brother of the same profession, young Jenner was carefully trained in the classics, but at an early age, showed a taste for natural history. In the method of the period, he served an apprenticeship to a surgeon near Bristol, and upon its completion in 1770 went to London, entered as a student at St. George's Hospital, and had the singular good fortune to become the inmate of the family of the famous John Hunter. He soon became a favorite pupil. At this time, Mr. Hunter was forty-two. He was already a well-known teacher, had been a senior surgeon in the wars in Portugal; and in 1771 there was placed at his disposal the collections in natural history which had been brought home by the famous circumnavigator, Captain Cook.

Jenner was remarkable for the neatness and precision with which he made preparations of anatomy and natural history. His dissections of tender and delicate organs, his success in minute injections, and the taste which he displayed in their arrangement is said to have been almost unrivalled. He was solicited by Captain Cook to become the naturalist of his succeeding expedition, the following year, but Jenner's desire to settle in the place of his nativity was too strong to admit the acceptance of the appointment. He preferred the seclusion of a country village, and to this selection do we owe his transcendent gift to mankind. John Hunter, from the first, was very proud of Jenner. He wished him to unite in establishing a school in London to teach natural history, human and comparative anatomy. Although declined, the instructions of his great master were not lost upon the young country surgeon. Jenner not only possessed the proper spirit of inquiry necessary to a student of nature, but he endeavored to excite it in others. He was instrumental in establishing two societies of professional men in his neighborhood, meeting for the common purpose of advancing their knowledge upon subjects connected with their pursuits and for better personal acquaintance. He was of a lively disposition, and distinguished for mirth, playfulness and wit. As a consequent, he was a general favorite. The following lines, addressed to a lady upon the recovery of her daughter, and sent with a pair of ducks, afford a specimen of his humor:

> "I've dispatched, my dear madam, this scrap of a letter,
> To say that Miss May is very much better;
> A regular doctor no longer she lacks,
> And therefore, I've sent her a couple of quacks."

Although separated, the master and pupil were kept in touch by a regular correspondence. From a letter of Mr. Hunter, I quote you these inquiries, since they give a glimpse of the thoughts of both: "See if you can catch the number of pulsations, and the frequency of breathing in the bat without torture. If the frost is hard, see what vegetables freeze; bore holes in large trees and see whether the sap runs out, which will show it is not frozen."

Seeming trivial accidents often lead inquiring minds to most important conclusions. To the ordinary boy, the falling of the apple from the tree would have been accepted as a matter of course; not so to Newton. The clatter of the lid of the boiling tea-kettle, as lifted by the escaping steam, formulated to the mind of Watts, the harnessing into service a power which revolutionized the motor forces of the world.

While yet a pupil of Mr. Ludlow, a young country woman remarked, "I cannot take small-pox, for I have had the cow-pock." This incident never escaped Jenner's recollection. He describes the process of inoculation which at this time was considered, and truly so, a very important discovery, "bleeding until the blood was thin; purging until the body was wasted to a skeleton; and starving on vegetable diet to keep it so." The patience manifested by Jenner in the prosecution of his studies upon cow-pock, the scrutiny to which he subjected every appearance that presented itself, and the fortitude with which he withstood every untoward circumstance, are entitled to all praise, and exhibit his capabilities for conducting original investigations. He divested the subject of its difficulties and obscurities, and gave to vague, inapplicable, useless rumor the certainty and precision of scientific knowledge.

It would be interesting to know the influence and aid of his great master during this period; since at this very time Hunter, with a rare devotion, was pursuing his investigations upon the origin, course, and development of the great pock.

Dr. Jenner's first vaccination was on the fourteenth of May, 1796. Two years later he visited London for the purpose of demonstrating its value. Although he remained nearly three months, he was unable to induce a single professional friend to make the experiment, and returned to the country without having succeeded in prevailing upon a single individual to submit to inoculation of the virus. He pressed the subject so much with his professional brethren in the country that, at a medical club at Redborough, to which he belonged, he was threatened with expulsion if he persisted in harassing them with a proposition which they then conceived had no foundation but in popular and idle rumor, and which had become entirely distasteful to them.

Mr. Cline, of St. Thomas's Hospital, to whom some virus had been sent, clandestinely inserted it into the thigh of a patient suffering from hip disease with the thought of producing counter-irritation. The development of the vesicles interested him, and they were permitted to run their course without disturbance. Small-pox matter was after introduced in three places, but the slight inflammation soon subsided. The demonstrations were repeated with much enthusiasm. Mr. Cline soon urged Dr. Jenner to settle in London, with the promise of an income of ten thousand pounds a year. I quote from his letter in reply: "Shall I who, even in the morning of my days, sought the lowly and sequestered paths of life, the valley and not the mountain; shall I, now the evening is fast approaching, hold myself up as an object for fortune and for fame? Admitting that it is a certainty that I obtain both, what stock should I add to my little fund of happiness? My fortune, with what flows in from my profession, is sufficient to gratify my wishes; indeed, so limited is my ambition, and that of my nearest connections, that were I precluded from future practice, I should be enabled to obtain all I want. And, as for fame, what is it? A gilded butt, forever pierced by the arrows of malignancy. The name of John Hunter stamps this observation with the signature of truth."

It is very probable that this letter was written when smarting under the sting of ridicule and the sharpest criticism from the profession, from whom he had looked for support.

Sooner or later the world, however, recognizes the true value of its servants. Fortunately, Dr. Jenner lived long to enjoy his well-earned fame. Foreign societies and academies enrolled him in the list of honorary membership, and the home societies adorned their transactions with his name. Oxford granted him an honorary degree such as had not been conferred before in seventy years. Vaccination was instituted in the army and navy. Napoleon ordered the soldiers of the empire to be vaccinated; and the practice soon extended through the civilized world. Large sums of money were sent him, subscribed in various countries, even the far off East. Parliament voted him special honors. The following incident is worthy of mention: Dr. Wickham, one of the travelling Fellows of the University of Oxford was imprisoned in France. Dr. Jenner addressed a petition to Napoleon for his liberation at the time when his animosity to England was at its height. It was presented when in his carriage, changing horses. "Away, away," exclaimed the emperor. "But do you see, said Josephine, who was beside him, do you see from whom it comes, Jenner?" The tone of Napoleon's voice was immediately softened; "What that man asks must not be refused." And the petition was granted.

Dr. Waterhouse, of Cambridge, who wrote his thesis in Latin and received his degree from the famous university at Leyden, introduced vaccination into America, an event spoken of to this day as reflecting honor upon this university city. Treasured to the last was the snuff-box sent by Dr. Jenner which contained the precious virus.

In connection with this subject, should ever be coupled the name of the late Dr. Henry A. Martin, of Boston, who introduced into America and established the cultivation of bovine virus, who eradicated smallpox from the armies of the Union during the late war, and who, since Jenner, was probably the best authority upon the subject of vaccination.

Cotemporaneous with Dr. Jenner and also a student of John Hunter, was England's most famous surgeon of the generation, Sir Astley Cooper. During his career as a teacher, he had under instruction eight thousand pupils, moulded the surgical thought of two continents, and was the author of several works never surpassed in accuracy of description and in beauty of illustration.

Scarpa, the celebrated Italian surgeon, now known to most of you only by the name of a triangle, was scarcely less famous, and was the originator of the important branch of anatomical teaching so valuable to the practical surgeon — regional anatomy.

My genial master, the poet and autocrat of modern New England literature, was a student of Baron Larrey, the great Surgeon-General of Napoleon, whose works upon military surgery may still be studied with profit.

The achievements of the yet living masters are too recent to require enumeration — Pasteur whose early scientific investigations were the inspiration to the genius of Mr. Lister, which has revolutionized surgery; Virchow, the man of letters, equally distinguished in statemanship as in science, who, as the President of the Berlin International Medical Congress, freely awarded to American surgeons present pre-eminence — histology, pathology, anatomy, bacteriology, surgery, re-written for your instruction by men yet active in moulding and formulating new truths.

What of America and her contributions to the science of medicine during the century? Science is cosmopolitan. Wherever best taught, there her votaries flock to fill the open doors. Thus during the early part of this period, America's best medical men were educated abroad. Upon a proper pedestal we have yet to place a memorial statue to Dr. Benjamin Rush, of Philadelphia — a statesman, signer of the Declaration of Independence, member of Congress, Surgeon-General of the Continental Army, founder of Dickinson College, President of the Society for the Abolition of Slavery, Treasurer of the United States Mint for fourteen years, promoter of public improvements. He was graduated at Princeton, studied medicine in Edinburgh, was a professor in the Philadelphia Medical College, and published many works which were long quoted as authority.

Ephraim McDowell of Kentucky, rendered the world his debtor. He is often referred to as the obscure backwoods surgeon, who stumbled upon a new idea as by accident. It is just a century since Dr. McDowell returned from Edinburgh, where he had been for two years a pupil of the famous John Bell. To the teaching of this great master, Dr. McDowell refers as the source of the conviction which fourteen years later found fruitage in the first successful ovariotomy.

Nearly midway in the century did the discovery of ether and its practical application by Morton render to surgery the priceless boon of anesthesia. Within a few days have I seen two of the physicians who were present in the amphitheatre of the Massachusetts General Hospital, and who witnessed the first surgical operation ever performed under an anesthetic.

It is almost invidious to repeat, even in your hearing, names selected from the many who have contributed to the knowledge of our art in America: Bigelow, father and son, of Boston, each equally famous in their respective subdivisions of labor; Bowditch, world-wide known as physician and philanthropist; Warren, for three generations a famous name in the annals of surgery, the senior, John, student of Sir Astley Cooper, whose teachings served as inspiration to his latest .day; Muzzey, Crosby, Smith, Holmes, all New England names; Sims, Flint, Gross, dead yet living; Sayre, Davis, Didama, living and active, around whose memories in early association we fondly linger, from whose teachings we derived inspiration and help, — these and a host of others, we gladly hold up to you as models of good citizens, wise teachers, thoughtful counsellors in sickness and in health, men who leave the world better for their living, immortal because having exerted influences for the moulding of higher life, which will continue to the end of time.

Science takes no backward step. All these co-related, kindred branches have developed in such a way that each is more difficult to teach, and each requires more time on the part of the pupil to master. The general preparation must also be of a much higher order to fit for the proper entrance upon the study of medicine. By general consensus of opinion, although there are many excellent physicians who have not had this preparatory training, the medical student of to-day should have had a college course of instruction or its equivalent. During the last generation the methods of teaching medicine have greatly changed. Earlier, as a supplement to the personal instruction which the student was supposed to receive by an apprenticeship to the physician selected, the winter courses of lectures were planned. These, together with a limited knowledge derived from dissections, were repeated with slight variation; and at the end of two courses, the student was usually supposed to be fitted for practice and was granted a diploma. There was no prescribed preparation, and the country school-boy was taught, side by side, with the college graduate. The lecture, filled with Latin technicalities, of necessity expressed in terms beyond the comprehension of the immature youth, was often equally unfitted to serve the better purpose of the collegiate. The criticism was apparent, but the remedy not patent.

Your own college was among the very first to take the initiative and demand entrance examinations and graded courses of instruction. You also set the example of permitting final examination only after three years of thorough, careful, satisfactory pupilage. More recently the movement is developing to demand a four years' course of graded instruction and to supply this, it is obligatory to have better teachers and more of them. This necessitates smaller classes, recitation instruction, quite as much as lectures and laboratories. These are veritable workshops, alike for master and apprentice. Anatomy, chemistry, physiology, pathology, bacteriology, materia medica — for all these branches of science, shop-room is required, and in extent quite beyond earlier needs.

The medical college of to-day demands another building, or series of buildings, than that of the former pattern. The amphitheatre as the lecture-room — cramped, crowded, stifled in the upper rows; to the last degree inconvenient of access; reached by garret-stairs, to descend to seats, as upon an illy-constructed ladder; a nightmare dream of our earlier years — should be relegated to the past. Bright, airy, well-lighted rooms are required, made pleasing and attractive, with good seats and tables, where the personal work may go on under the direction of well-trained assistants.

The modern medical college should be so closely connected with the hospital that the clinical teachings may be made illustrative and profitable. Indeed, the hospital should be the *workshop* in the better sense, where the student becomes familiar with the "living pictures" of our poor broken humanity, the reconstruction of which is to be his future life-long labor.

Hospitals are important for the care, especially, of the poor, the home for the homeless. These, the public have long held in kindly interest and support. As a rule, the best physicians of the respective localities have willingly rendered gratuitous service; but the medical college has been too often looked upon as a private affair, a doctor's business venture, entered into for gain. Should it not, the rather, be considered by the public as a *technical school* of the highest order?

The general public has long felt it a wise investment to furnish the very best opportunities for the education of ministers, teachers, engineers, architects, artists even. Should they not easily see that they have a *vital personal* interest in the proper fitting and training of that large body of *physical engineers* who are to have the oversight of their own persons, to care for and keep in order their own *vital machines?*

In large degree the physicians of Syracuse are graduates of the medical department of your own university. Note the honor which they reflect upon the persistent, self-sacrificing efforts of your teachers in the years when the standards of medical learning were here first advanced with regard to the quality and attainment of the pupil, rather than to the numbers to be graduated.

The self-interest of the entire public, the rich by no means excepted, demands that the best possible advantages be given the student of medicine, to whom later is to be entrusted the life and welfare of the body politic.

Let the general public, represented by your goodly city, show their approval of the work here so well inaugurated by a generous support given to the medical department of your university. A new building should be erected at once, so commodious and so well equipped that it may not suffer in comparison with any in the great Empire State.[2]

Within a few days I have examined with some care the Johns Hopkins Hospital in Baltimore, in regard to the advantages offered for the instruction of medical pupils. Here the usual process is reversed. The hospital predominates; but there are laboratories in considerable number with facilities for the teaching of the *science* of medicine, while the *art* is in daily practice in its many splendid wards. The medical college proper is yet to be, but the thought tends directly in the line of small classes, personally trained by competent teachers. These to be competent require special instruction in the art of teaching, now more lacking in medicine than in any of the great departments of science.

The really successful instructor is he who imparts of himself as well as his subject. This has been termed the "divine afflatus" of his calling; but it is really because such a master knows his subject, and this knowledge begets affection for it. He is "eaten out" by it. It becomes a part of himself, and *it*, as well as *he*, must talk.

There is nothing difficult to understand about such divinity. It is in the boy, when he catches his first rabbit, visits for the first time the circus, and he must tell the whole household about the new experiences. Such love begets knowledge, and to the real student the border lines of the same widen from day to day. Nothing is so detrimental as a half-truth. Let the line be drawn as clearly as possible between ignorance and knowledge.

There is an *art* in medicine as well as a *science*. Let me quote you in illustration from our inimitable Dr. Holmes — mourned by us all — who had the power of imparting even dry facts with the admixture of a wit which had the effervesence and flavor of champagne.

"You will remember, of course, always to get the weather gauge of your patient. I mean to place him so that the light falls on his face and not on yours. It is a kind of ocular duel which is about to take place between you; you are going to look through his features into his pulmonary, hepatic and other internal machinery; and he is going to look into yours quite as sharply to see what you think about his probabilities for time and eternity. No matter how hard he stares at your countenance, he should never be able to read his fate in it. It should be cheerful as long as there is hope, and serene in its gravity when there is nothing left but resignation.

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[2] At the banquet following the graduation exercises, a subscription was opened. Funds have been received, and a new building to cost $100,000 is rapidly approaching completion.

"The face of a physician, like that of a diplomatist, should be inpenetrable. Nature is a benevolent old hypocrite; she cheats the sick and dying with illusions better than any anodynes.

"If there are cogent reasons why a patient should be undeceived, do it deliberately and advisedly, but do not betray your apprehensions through your tell-tale features. We had a physician in our city whose smile was commonly reckoned as being worth five thousand dollars a year to him — in the days, too, of moderate incomes. You cannot put on such a smile as that, any more than you can get sunshine without sun; there was a tranquil and kindly nature under it that irradiated the pleasant face it made one happier to meet on his daily rounds. But you can cultivate the disposition and it will work its way through to the surface. Nay, more — you can try to wear a quiet and encouraging look, and it will react upon your disposition and make you like what you seem to be, or at least bring you nearer your own likeness."

Science has not alone shown the safe and sure way in which wounds tend toward recovery, but, as is usually the case, the really, in the end, easy path for the surgeon to pursue. Let the coming century find no practising surgeon who is not master of his surgical technique, as the high priest of a most sacred calling.

Almost unconsciously we are led to think of modern surgical technique as an *art* rather than a science. Let us so accept it. Based upon scientific principles, the work should be artistic; a blundering surgeon may be aseptic, but this should never be an excuse for clumsiness. The true surgeon is skilful, which term means so much, full of that skill which makes his work really automatically correct; like the master of a musical instrument, who through it pours forth the enraptured strains of soul-inspiring, moving power, with never the thought of hand or bow or string.

Anesthesia and asepsis have brought into surgery a small army of men who lack the training which, half a century ago, was considered absolutely essential to success. Then to be a surgeon meant an apprenticeship. Should it be less at the present time? The greatest danger to-day lies in the willing, enthusiastic, but half-trained recruits with whom our ranks are overcrowded. Here as elsewhere comes the law of the survival of the fittest, but at what fearful cost of life, matched, almost overshadowed, by the self-condemnation which permits of no condonement!

The recent Address on Surgery before the British Medical Association, by Mr. J. Grieg Smith, "The Art of the Surgeon," should be read by every student, by every surgeon.

"That the art of surgery is teachable there can be no dispute; that it is worth teaching is still less disputable. Why, then, is it not taught? The art can be taught only in one way, the way of teaching all the plastic arts.

"The young artist must, while beginning the practice of his art, have a master at his elbow, a master who will guide him in the use of his hand, his eye, and his instruments; who will in the fullest sense make him his pupil, and personally lead him on, step by step, toward such excellence in the art as he himself has attained. . . .

"We might ask to be put on the level with the fine arts, and seek for a Royal Academy of Surgery, as we have Royal Academies of Painting, Sculpture and Music. To such an academy a school of teachers should be attached. The school would be a surgical hospital, with every known excellence of hygiene and nursing and appliance. The teachers would be those who are superior in our art, the pupils men who are already qualified, who seek for practice in the higher walks of surgery. Then let us work for it."

A great art is not builded in a day. We profit from the experience of our predecessors. The coming centuries will have much to criticise in the review of our labors. Let them also find themselves indebted to us for much experience of real value in both the science and the art of surgery.

The venerable oath of the great Father of Medicine which you repeat to-day, binds you, as in ancient times, to visit the sick man for the sole purpose of doing him good, and to so conduct yourself as to avoid the appearance of evil. This same bond makes us brethren in a common cause. The teachings of our science, which you are called upon to disseminate are already of such mighty import that, if they were universally adopted, they would divide the sufferings of mankind, increase the longevity of the race one-third, and double its productive power.

In the evolution of medicine and sanitary science lie, in large measure, the happiness and destinies of the ages to come. In the everchanging kaleidoscopic pattern, the individual factors of man's personality should intertwine and blend, as the colors, at the hand of a great artist, in perfect harmonic symmetry and relationship.

Contribute your part to the better development of the mental, the moral, and the physical nature of man; the great *tripod* upon which must ever rest the advancement of the race; and in the harmonic action of these great forces there must evolve the already heralded progress of the twentieth century.

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Original Articles.

COTTAGE HOSPITALS.[1]

BY MORRILL WYMAN, M.D., CAMBRIDGE, MASS.

(Concluded from No. 12, page 287.)

Human beings are so constituted that they can resist to a certain extent the noxious agents to which they are constantly exposed, otherwise a single bacterium might prove fatal, or the spread of contagium be unlimited.

Lister, early in his investigations, pointed out that the tissues of the body must exert a powerful bactericidal effect in many wounds and after operations of small extent to which bacteria gain access in considerable numbers. The human saliva and the adenoid tissue of the tonsils, and that about the esophagus, are believed to have this bactericidal effect, the active cells even coming out from the tissue to get within striking distance of the approaching bacteria.[5]

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[1] Read before the Cambridge Society for Medical Improvement, March, 1895.

[5] Dr. Sims Woodhead on Channels of Infection in Tuberculosis. London Lancet, November 17, 1894, p. 957.

Dr. E. M. Buckingham on Medical Treatment of Diphtheria, Importance of Open Air. Boston Medical and Surgical Journal, February 14, 1895, p. 147.

It is the object of ventilation to remove or dilute unavoidable and constantly recurring impurities until they come within the limits of this bactericidal influence.

Although carbonic acid is held by many to be an index of the pollution of air in closed rooms, it cannot, as already said, be accepted as an index of the amount of dust or the impurities that do not produce carbonic acid, yet dust of various kinds and bacteria are found in hospitals by the microscope and the koniscope of Atkins in bewildering numbers. With the latter instrument the products of combustion have been demonstrated to have spread 24 feet from their source in less than 35 seconds after striking a match to light the gas in a room of over 5,000 cubic feet of space; showing the movements of air and the delicacy of the test for these kinds of impurities.

R. Stern, of the Hygienic Institute of the University of Breslau,[6] has made some valuable experiments on the influence of ventilation on the numbers of organisms, either alone or attached to and riding about on particles of dust floating in the atmosphere, and has come to these results: when the air was perfectly still, the dust and bacteria thrown into the room prepared for his experiments, sank quickly to the floor; when ordinary dust from library shelves was employed, the air was almost entirely free of bacteria in an hour and a half. "The lowest limit of ventilation that caused an appreciable acceleration in the disappearance of germs from the air was an exchange of from six to seven times an hour of the whole volume of air in the room"; except by very strong winds bacteria were never driven from moist surfaces.

From a consideration of these conclusions Stern feels justified in recommending as a means of disinfecting rooms which have been occupied by persons suffering from infectious diseases, that as soon as the patient has been removed, the room be closed and allowed to remain so for at least twenty-four hours, after which, it should be quietly entered, and the floor, wall surface and furniture mopped with cloths saturated with corrosive sublimate 1 to 1,000. Under no consideration is dusting to be countenanced.

In connection with Stern's paper, it may be again stated that the winter ventilation of two feet a second at the Cambridge Hospital dilutes the air of the ward with an equal quantity of fresh air six times an hour. The summer ventilation is much larger.

Air is not chemically or physically pure; it contains beside its normal constituents something from the various objects or gases with which it comes in contact. Water which is claimed to be pure, healthy drinking-water is not, and ought not to be, chemically pure; but if it contain visible impurities, it cannot be regarded as good drinking-water. So the air of our wards may vary in many respects as to its chemical and physical constituents, but if it has an evident animal odor, it cannot be regarded as good breathing-air.

It is certain that expired air and the exhalations of the skin contain organic matter of an unknown nature, of offensive odor, which when existing in considerable quantity causes discomfort and oppression, and have to those examining ventilating ducts proved actually poisonous without other known change than that detected by the sense of smell.

It may be accepted on good authority that the amount of carbonic acid in the air is no certain index of the quantity of organic matter in it; nor does the process with the permanganate of potassium solution, which requires considerable time and much apparatus, prove satisfactory.[7] It is quite unfitted for use by those upon whom the management of hospitals usually falls. We must seek for the desired test elsewhere than in chemistry.

The question belongs to physiology; chemistry does not teach physiology. The sense most readily affected by the air of our habitations is that of smell; it is the one first appealed to. No competent observer would consider a ward well ventilated which has a distinct musty or animal odor, whatever may be its other conditions.

Dr. De Chaumont, who has made many observations on the condition of the air as indicated by our senses, found that air with a temperature of 63° F., which has no animal odor and is called "fresh," does not contain above two volumes of carbonic acid in 10,000 due to respiration.

Humidity, inasmuch as it intensifies the effect of odors, adds still more value to the sense of smell as a guide to good ventilation. We know well that the evening air, which, as a rule, is moister than the day air, has great influence in bringing out the perfume of flowers. Man has not the wonderful sense of smell of some of the wild animals, and yet there are few persons who fail to recognize the sea breeze by this sense before it can be demonstrated by chemical methods or instruments of precision.

It may be objected that this sense varies with different individuals and with the same individuals at different times. This is true. The testimony is of the class of subjective symptoms, but it is from this class that we draw the testimony upon which much of our medical reasoning is founded. Physiological and pathological problems must be investigated and solved by physiological and pathological methods. Some of the specific diseases have a peculiar odor of diagnostic value to the experienced physician.

Leaving out of consideration, then, those tests requiring a laboratory and chemical experts, which can seldom be obtained in our hospitals, and not forgetting its limitations, this sense affords us practically one of the best, if not the best single test we have; it is a good common-sense test. It is well to adopt it, at least until a better is found, for, whether we do or do not, it is the test our visitors will apply, and if just from the open air, it acts with full force, and upon it they will rightly ground an opinion as to the cleanliness of our hospitals. It will be hard to find one who perceives in the air a musty or animal odor who will say, "This is good, fresh, breathing air." It is the reverse; the continuous breathing of air containing such odor is unhealthy. The nurses at Cambridge Hospital are enjoined, when going from the open into the ward, to notice the difference in smell, and to set their ceiling ventilators accordingly, and if necessary put the fan in motion, which should soon restore the air to its proper condition.

The following determination of the relative proportion of carbonic acid in the wards of the Cambridge Hospital, March 16, 1894, we owe to the kindness of Dr. Theodore Williams Richards, Assistant Professor in Chemistry in Harvard University.

The air was taken with bellows from the middle of the ward and blown into the bottles standing on the ward table, care being taken to avoid anything from the breath of the collector; the bottles were stopped with paraffined corks.

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[6] Johns Hopkins Hospital Bulletin, vol. i, p. 15.

[7] Ventilation and Heating, by John S. Billings, M.D., p. 200.

The number of volumes of carbonic acid in 10,000, as determined by Pettenkofer's method, was as follows:

Bottle No. 1	7.1
Bottle No. 2	5.9
Bottle No. 3	6.5+
Mean,	6.5

Prof. H. B. Hill has determined, as the mean of eleven observations, that the proportion of carbonic acid in 10,000 in air taken 20 feet north of Boylston Hall in the "College Yard" is 3.39; deducting this from 6.5, the mean of Dr. Richards's determination, we had at that time in the ward 3.1 volumes in 10,000, as the excess of the carbonic acid in 10,000 above the normal. The air entering the ward at the same time was the usual winter supply of 2.2+ feet a second for each of the sixteen beds.

The cost of heating large quantities of cold air is a very important matter to those interested in the management of hospitals. The general heating of the Cambridge Hospital is by the hot-water system. The space heated includes the two wards of 64,000 cubic feet, with the ventilation as above described, and the Administration Building of 60,000 cubic feet, with ordinary house ventilation. The boiler fires are lighted in the last week of September and put out the last week in May. The coal burned during eight months' firing (average of three years) was 75 1-2 tons.

TEMPERATURE OF WATER IN THE BOILER AND RETURN PIPE AND COAL BURNED IN DECEMBER AND JANUARY, 1887–88.

		Temperature.					
		6 A. M.		12 M.		6 P. M.	
	Coal lbs.	Boil.	Ret.	Boil.	Ret.	Boil.	Ret.
Dec. 20,	800	148°	100°	180°	138°	186°	132°
21,	800	150	102	184	130	180	130
22,	800	160	110	186	132	192	138
23,	1,000	138	100	192	140	186	138
24,	1,000	160	110	200	140	200	140
25,	1,000	150	110	200	142	200	142
26,	800	140	110	200	140	200	144
27,	1,000	140	106	206	146	210	144
28,	1,000	150	110	210	148	210	162
29,	1,000	170	120	210	160	202	160
30,	1,000	170	120	208	162	210	152
31,	1,000	170	120	206	160	210	158
Jan. 1,	800	150	118	210	148	206	150
2,	800	140	95	200	140	206	152
3,	800	150	110	200	142	208	160
4,	800	136	106	210	152	198	140

NIGHT TEMPERATURE OF WARDS.

1888. Jan.	9	10	11	12	13	14	15	16	17	18
8 P. M.	73.5°	73°	71°	68°	75°	77°	77°	71°	70°	74°
9 "	72.5	71.5	68	70	74	75	72	..	69	73
10 "	71	70.5	65	74	71	71	70	68	68	71
11 "	70	69.5	61	70	70	69.5	68	70	68	69
12 "	70	68.5	63	64	68	69	69	71	67	71
1 A. M.	70	67.5	65	63	69	68	70	71	68	71
2 "	69	66.5	62	62	68	66	68	71	68	69
3 "	68	68	60	63	69	66	65	71	68	68
4 "	68	70	60	64	70	66	66	70	67	66
5 "	67	65	62	64	69	69	67	70	69	64
6 "	66	60	64	70	69	69	70	70	70	66

COAL BURNED UNDER THE BOILERS FROM APRIL 1, 1887, TO APRIL 1, 1888.

	Tons.
April, 1887	2.75
May	2.75
June	.6
October	4.75
November	9.
December	11.7
January, 1888	19.25
February	13.6
March	11.1
	75.50

The preceding tables give the temperature of the heating boilers and of the return pipes, with the night temperature of the wards; the amount of coal burned in the months of December and January, the two most expensive months; and, what is of great interest in a charity hospital, the quantities burned during the whole period of firing.

The following table of temperature and relative humidity of the ward is given for March and a part of April, 1894. The readings of the wet and dry bulb thermometers were taken from Prof. Joseph Winlock's hydrophant; its place was on a shelf in the ward without any whirling or swinging; a part of the time it was over the ventilating opening in the floor, where it was exposed to a good draught; no material difference between these two places was noted.

RELATIVE HUMIDITY BY WET AND DRY BULB THERMOMETERS.

	Ward.			*Outside.*		
1894	Wet	Dry	R. H.	Wet	Dry	R. H.
March 5,	60°	71°	49%	44.4°	36°	29%
6,	60	71	49	49.9	60	44
7,	62	71	58	42	56.5	17
8,	60	70	52	38	42.3	62
9,	58	71	43	37	41.5	61
12,	50	69	47	38.5	46.2	43
13,	56	67	47	38	46	40
14,	57	68	47	36	39	64
15,	55	69	85	31	38	51
16,	58	69	47	38	39	86
17,	58	69	47	37	45	39
18,	63	73	54	46	55	44
19,	67	76	60	57	63	65
20,	60	74	39	37	50	18
21,	58	68	51	31	42	20
22,	58	70	44	43	51	40
23,	58	70	44	38	38.2	98
24,	55	67	41	27	36	21
25,	60	71	49	49	44	64
26,	55	66	44	27	32	50
27,	52	66	32	21	26	40
28,	53	67	34	24	31	36
29,	53	63	47	35	36	95
30,	55	68	38	32	38	45
31,	54	64	48	40	51	25
April 1,	60	70	52	49	61	33
2,	56	70	36	35	45	27
3,	53	67	33	26	33	37
4,	56	67	46	42	47	66
5,	60	73	42	48	57	44
6,	58	70	44	36	40	65
7,	56	69	39	33	43	21
8,	57	69	43	34	34	100
9,	55	67	41	32	34	74

The table of temperature and relative humidity of the outside air is, by the kindness of Prof. Edward C. Pickering, Director of the Observatory, taken from his record.

There is much difference of opinion as to the proper percentage of humidity for health. In the open air it must always be considered with reference to its temperature. In this hospital, where the temperature varies very little from 70°, the average percentage through the winter was 43.6; in a sitting-room warmed by an open wood-fire in a house with halls warmed moderately by a hot-air furnace the humidity through the winter was about 60%.

The above table is given as indicating the physical condition of the hospital; no attempt is made to change this condition by artificial means; in summer it must necessarily be that of the outside air.

The motive power for winter ventilation is the difference of temperature, within and without, together with warm air from the wards at 70° which reaches the ventilating chimney through the foul-air ducts (losing less than 10° of heat on its passage), and the waste heat from the boilers and kitchen. In the late spring and early fall the heat in the ward chimney and kitchen, in which a good fire is kept up night and day, and the windows, have done fairly well for a great part of the time. Although the air entering the windows even in what seems to us a calm, is much greater than one would suppose, its distribution is unequal and very different in this respect from that which comes in by the ten allotted channels. Neither at times is the weather suitable, or air movement enough, for the proper flushing of the ward.

Then again in the heats of summer, in the hot sultry weather without a breeze, the sick are liable to suffer, in a manner depressing to both mind and body. This requires a much larger ventilation than has yet been considered.

In the Cambridge Hospital the principal motive power in summer is the fan. It is what is known as the heliacal or "screw" fan, 36 inches in diameter. It is set in the side of the air-chamber, firmly fixed by wedging tightly into the brick door-jambs in the wall, without connection with any resounding woodwork. It moves quietly, and produces no other sound than that of the cutting of the air by the blade — a slight buzz. It makes 500 revolutions a minute, and is driven by an electric motor of 500 volts — about three horse-power. It has an air-moving power of 10,200 cubic feet a minute, and is equally well fitted to exhaust as to propel, but it is more convenient to use it as a propeller.

The air is taken in at about the same height above the grass-covered lawn around the hospital as that for the winter ventilation, and pursues the same course through the air-chamber, heating-boxes and register into the ward. The pressure on the air-chamber, when its windows and doors are closed, and the ten ward registers alone open, is about one-tenth of an inch of water, as measured by an anëroid barometer. In the following table is the amount of air delivered in the ward by the ten registers at the dates named during the summer of 1893:

AIR DELIVERED BY HELIACAL FAN,

(36 inches in diameter, 500 revolutions a minute).

1893	Each of 10 registers, cub. ft. per min.	Each of 16 beds, cub. ft. per sec.	For whole ward, cub. ft. per hr.
July 22,	662	6.9	397,000
Aug. 30,	687	7.1	412,000*
Sept. 2,	650	6.1	390,000†

* Average 4 observations. † Average 5 observations.

No doubt a certain amount of force is lost by using the whole air-chamber as a duct for reaching the several heating-boxes. So would force be lost by the resistance offered by the walls of multiple ducts for the same purpose; a loss that increases with their surface and length and as the square of the velocity of the air passing through them. Another and still greater objection to long air-ducts, is the difficulty of keeping them clean. Of this we have full evidence in the constant accumulation of dust in various forms in our foul air-ducts, requiring more frequent cleaning than one would suppose. The cleaning is a very troublesome matter even in those ducts large enough for the cleaner to creep through. On the other hand, every part of the air-chamber is open to inspection, and accessible with proper cleaning appliances. Again, the transmission of sound from the fan through metallic and wooden ducts has sometimes been found objectionable. Undoubtedly, the loss through the walls is considerable.

The table shows that six cubic feet a second is delivered to each bed; three times that given in winter. In its course as already described, this large quantity of air draws along with it much air from its immediate vicinity, and materially aids in its distribution through the ward. In the winter, as already said, the wards are more under the influence of the ventilating chimney, and air finds its way by a multitude of other passages besides the registers; in the summer when the fan is at work, the wards are more or less under pressure from without, and only that entering by the registers is to be considered in estimating the ventilation. This table shows that a quantity of air equal to the whole capacity of the ward, 21,000 cubic feet, is poured into it twenty times an hour.

It is sometimes questioned whether the movement of these large volumes may not cause draughts injurious to the sick.

The registers are so arranged that no bed is in the direct draught. We have a good illustration of the distribution of air through a room in the common hot-air furnace. The warm air from a register in the floor at first rises directly upward, drawing with it more or less of the surrounding air until it reaches the ceiling, where its current is diverted and more or less equally distributed through the whole room. It is not the current, but the diffused warm air that reaches us.

So of the ward, it is the general air of the ward, with a movement inappreciable by the senses, that reaches the sick.

The injurious effects of draughts probably depend for the most part on difference of temperature caused by the unequal or one-sided cooling of certain portions of the body only; if there is perspiration this local influence is still greater. These effects are first felt by the vaso-motor and sensitive nerves of the skin, disturbing its circulation in the first instance, and then spreading and throwing into confusion the nerves of other parts, and even reaching the circulation of the internal organs. This confusion does not happen when the whole body is equally exposed to the same influence, even if it is a wind.

A one-sided radiation from our bodies when near a cold wall or a cold closed window may cause a sensation as objectionable as that of a draught of cold air from them, and is often mistaken for one.

The most important general ventilation is "the flushing of the wards." Formerly when this was in process, the greater part of the air entered through the large windows at the end of the ward, passing through its middle to the opposite end, while the beds, which are near the walls, are quite out of the way of the first movement but enjoy the full benefit of the general change of air which follows.

The fan now does the greater part of the "flushing" through the ten registers. In cold weather very large volumes of warm air are thrown into the wards for a short time, the heat of the boilers being temporarily increased for this purpose. Although the temperature of this large quantity of incoming air may be somewhat lower than that ordinarily supplied, that of the walls is practically unchanged, and on stopping the fan the air soon regains the degree it had when under the influence of the ventilating chimney alone.

The fan is so valuable an agent in supplementing the chimney and so readily meets the varying condition of the atmosphere, that without it the equipment of the Cambridge Hospital would be incomplete.[8]

The summer ventilation, as already said, is three times that of winter; it dilutes the air of a ward with an amount equal to its capacity, twenty times an hour. It carries away so much of whatever is diffusible or miscible in the air that the relative organic or chemical impurities remaining as measured by the proportion of carbonic acid, compared with Dr. Richards's determination in winter (6.5 in 10,000 volumes), does not add one volume in 10,000 to that normal to the atmosphere in Cambridge, as determined by Prof. H. B. Hill near Boylston Hall — not half the proportion (two volumes in 10,000) generally adopted as the index of good ventilation. No pollution can then be detected by the sense of smell.

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[8] See experiments and observations on the summer ventilation and cooling of hospitals, Proceedings of the American Academy of Arts and Sciences, Vol. xxx.

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BOW LEGS.[1]

BY FRANK E. PECKHAM, M.D., PROVIDENCE, R. I.

The deformity of bow legs is of very common occurrence in young children and even infants; and judging from the stories the parents tell, a great many physicians advise and really believe that expectant treatment is the proper one to pursue. In other words, if every family with a bow-legged child should call upon their "family physician" for advice, the largest number of answers would be, "Let it alone; the child will outgrow it"; and in the majority of cases I am inclined to think the physician would be perfectly right.

But it cannot be denied that there are a certain number where the deformity persists, and remains a lasting monument to the neglect of the parents or the physician, or both.

The object of this paper is to enter a plea for the unfortunate minority.

Bow legs is one of the many deformities resulting from rhachitis, and consists of an outward bending of the bones of the leg, which may involve both femur and tibia, or only the tibia. Rhachitis is due to defective nourishment, in consequence of which calcification of the bones is interfered with, thus rendering them soft and pulpy and unable to resist the forces which are brought to bear upon them. These forces are the superincumbent weight and muscular action.

When in this softened condition it will be of interest to know just where the bending will occur and what direction it will take; because in any case of rhachitis, before deformity results, a great deal may be done to prevent it.

When a perfectly healthy child stands in the erect position with the heels together, the line of gravity falls outside of the knee-joint; but the minute the knees become separated to any extent by this deformity, the line of gravity falls inside the joints. The child then instinctively separates the feet, which enables it to stand more firmly; and the superimposed weight of the body is thus placed at a greater mechanical advantage to slowly increase the deformity.

If the anatomy of the femur be recalled, it will be seen that the anterior surface is convex and twisted on its axis, the upper part looking forward and slightly outward, while the lower part looks forward and slightly inward, the upper and lower portions being broader than the central.

Then, looking at the bone in cross-section, at the upper end it approximates somewhat to a circle (Plate I, Fig. 1); as you go towards the middle, it is smaller and more oval antro-posteriorly (Plate I, Figs. 2 and 3); and below the middle it broadens laterally as it emerges into its lower extremity, and forms the condyles for articulation at the knee-joint. The whole shaft of the bone is slightly convex anteriorly.

PLATE I.

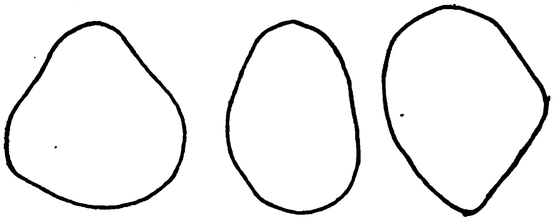


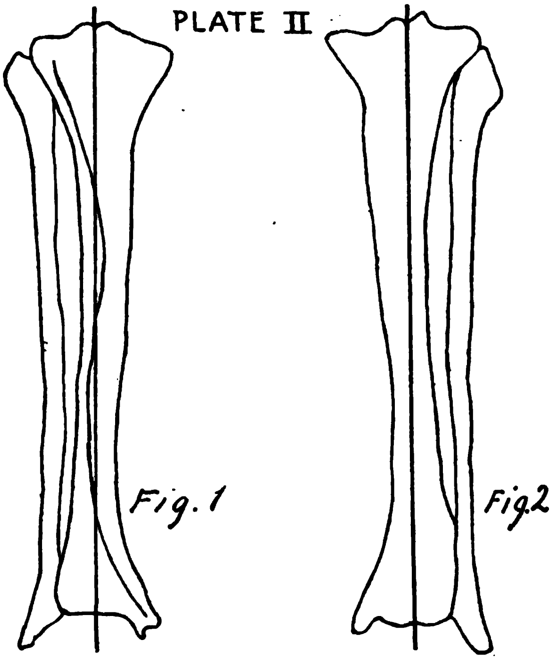
Fig. 1. Section at lesser trochanter. Fig. 2. Upper third. Fig. 3. Middle.

[Reproduced from Wyeth's Surgery.]

With these anatomical points in mind, it is very evident that if the femur is to bend it is most likely to arch forward in the direction of its convexity or outwards and forwards near its middle portion.

Examining the bones of the lower leg, we also find natural curves showing the direction which the deformities will take. Thus, looking at the anterior surface (Plate II, Fig. 1), the crest of the tibia, which divides the two lateral surfaces, is very markedly curved. The curve may be seen on any leg unless very fleshy. Beginning at the top well on the outside towards the fibula, it crosses a perpendicular line drawn through the middle of the bone; then at the centre of this perpendicular it recrosses to the outside, and at the middle of the lower third once more goes over the line to the inside, making its most marked curve an outward one, with its greatest convexity at about the junction of the middle and lower thirds of the bone.

PLATE II



It is at this point we should expect the most marked deformity; and as a matter of fact it *is* at this point that the anterior bowing takes place, and also the outward curving which in many cases is so troublesome and is the last portion of the curve to yield to treatment. Looking at the tibia from behind, the same general curve of the bone is observed on the posterior surface (Plate II, Fig. 2).

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[1] Read before the Providence Medical Association, May 6, 1895.

Thus a short review of the anatomy of the bones of the leg shows us where to expect the deformities, and where to put forth our efforts in the line of preventive treatment.

Most cases develop at about the time the child begins to walk, for it is at this time that the legs first bear the weight of the body. The bones, already softened and pulpified in the rhachitic process, gradually yield to the superimposed weight of the body; and the result is curvature, slight at first, but slowly increasing until the maximum degree is reached.

In some cases the condyles of the femur become affected. As the deformity becomes more aggravated, more and more weight must of necessity be thrown upon the inner condyle; and the natural consequence is an atrophy, while the outer condyle increases in size and is apparently elongated. This condition about the knee-joint has sometimes been considered the cause of the deformity, but looked at in the way just described it is rather the result of deformity,

The diagnosis of bow legs is easily made. As has been shown, the child stands with the feet separated, the thighs somewhat flexed and the body tilted forward. Walking in this position results in the waddling gait which is so characteristic. There is also a tendency in these cases for the toes to turn in; and at times this position of varus is very marked. As the child stands erect, the curve looks to be a gradual one, including both femur and tibia, and in the books this is put down as the most usual distribution; but the majority of cases coming under my observation have been curved mostly in the tibia, and in these cases, as the improvement continued, it was a noticeable fact that the last portion to yield was at the junction of the middle and lower thirds, just at the point where the anatomy has led us to expect it.

The only deformity which resembles bow legs is congenital dislocation of the hips; but with the child stripped and a careful physical examination, especially with reference to the trochanters and Nelaton's line, the diagnosis is easy.

As it is a fact that the majority of the cases would become straight without treatment, it may be of interest to see what nature's method is. The first process is that of rhachitis; and in this process there is an inflammation of the bone-forming tissue. The formation of bone takes place in the inner layer of the periosteum, and in the marrow at the growing ends of the bones. When inflammation begins, these portions become very much thickened and enlarged by being filled with a spongy mass, and the deposition of the lime salts necessarily ceases. In this softened condition the bones readily yield to the weight of the body and the action of the muscles. When recovery begins, the active inflammation ceases, the spongy mass is gradually absorbed, and the mineral salts once more deposited.

Bone substance is made up of dense, fibrous connective tissue, generally lamellated and arranged in a perfectly definite manner. When healthy bone tissue begins to be re-formed and the lime salts deposited in the bone substance, this lamellated structure tends to assume its original position; hence with the re-establishment of the normal process, and with the bones slowly increasing in length, the legs are noticed to be slowly growing straighter.

All cases, however, are not cured by nature's method, as any one may prove to his own satisfaction by noticing the number of bow legs to be seen in adults on the streets of Providence. Slight degrees of curvature are not readily noticeable in the female, being concealed by the dress. During the last three or four months I have noticed thirty adult males with varying degrees of outward curvature of the legs. I have only looked for the deformity in the male, but have no doubt it would be noticed in the female if looked for. This is proof positive that some cases never become straight if allowed to go untreated; hence it would seem proper to treat every case that comes under observation.

The treatment in each case would depend upon the age of the patient and the condition of the bones.

If the patient were an infant, the condition of rickets would probably be present and demand attention. The food would be regulated, the legs rubbed or massaged daily, and the legs grasped firmly and bent toward a corrected position. If the child had begun to walk and was under four or five years of age, then a mechanical appliance would be advisable; but the manipulation just described ought to be applied morning and night just the same.

There are various appliances for bow legs but the one in most common use consists of a rigid, metallic, inside upright extending from the sole of the shoe nearly to the perineum, to which leather pads are buckled extending around the points of greatest curvature. A joint is inserted in the metallic upright for motion at the ankle, but there should be none at the knee, as motion at the knee-joint would destroy the leverage. If the toes turn in and demand treatment, a metallic arm may be added running from the top of the upright upwards and outwards over the anterior and outer surface of the thigh and being buckled in the back, the toes may be held at any angle.

When the child gets beyond four or five years of age, the bones are much firmer, and do not yield to the mechanical methods. These cases must submit to operation in order to be straightened.

Operative measures include osteoclasis and osteotomy.

Osteoclasis is a perfectly safe procedure, and is used when the curve is not too near the joints. Its use has been objected to by some on the ground that the fracture did not always occur opposite the point of pressure; but experiments made by Bradford and Lovett demonstrated that the fracture was a transverse one and always opposite the point of pressure.

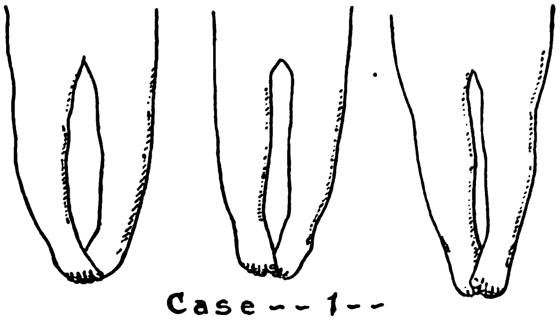
Osteotomy is to be employed in cases where the curve is near the joint, and also in the anterior curvature.

In curves with a very sharp angle it is sometimes necessary to remove a wedge-shaped piece of bone.

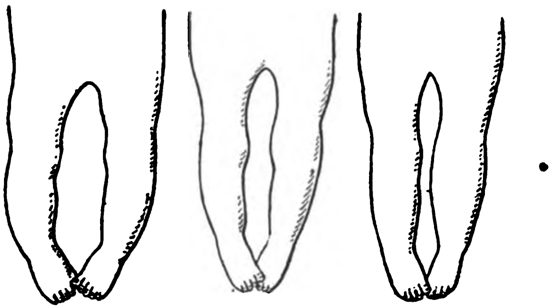
As a report of any number of cases would necessarily be a repetition, I have selected only two illustrative cases, and shall show by means of photographs the results of treatment.

Case I. Patient was a boy, one year and eight months of age. The usual apparatus was applied. The distance between the knees when first seen, April 9, 1893, was two and a quarter inches. The second tracing was taken July 19, 1893, the distance then being one and a quarter inches. The last tracing was taken October 8, 1893, when the distance was a little less than an inch.

This patient never returned again; but in March, 1895, I accidentally met both parents with the child. They said the apparatus had been continued several months after the last office visit, and omitted when they considered the legs straight. As the boy walked away from me the legs looked straight, but I had no opportunity to get a final tracing. The photograph therefore shows the improvement obtained in six months.



Case--1--



Case--2--

Case II. Patient was a girl, two years of age. Apparatus applied February 7, 1893, the distance between the knees being three and one-eighth inches. The second tracing was taken April 5, 1893, the distance between being one and seven-eighths inches. The last tracing, June 25, 1893, shows a distance between the knees of three-quarters of an inch; but at the junction of the middle and lower thirds of the tibia the distance is one and three-eighths inches. The photograph in this case shows the improvement for four months and a half.

These two cases show about how the people continue treatment in practice; but the more marked the deformity, the more likely is the patient to come as long as the physician thinks it necessary.

One point about these cases is that when seen walking, the deformity appears to be much more marked than it actually is when the feet are placed together and the tracing taken. This is due to the feet being so widely separated, as they are in the characteristic waddling gait which has been previously explained in the paper.

The Lectures at the London College of Physicians for the coming year will be delivered as follows: The Bradshaw lecture by Dr. Bradbury; the Lumleian lectures by Sir Dyce Duckworth; the Gulstonian lecture by Dr. Mason; and the Croonian lecture by Dr. Oliver.

CATARACT OPERATIONS BETWEEN THE AGES OF EIGHTY AND NINETY, WITH A TABLE OF CASES.

BY HASKET DERBY, M.D.

Intercourse with the aged is peculiarly the privilege of the ophthalmic surgeon. In that "his eye was not dim or his natural force abated," a prominent personage in the Old Testament is cited by the inspired writer as an exception to the common lot of humanity, well advanced in years. This can be said of comparatively few. Failure of vision, resulting from retinal changes or from impairment of the transparency of the crystalline lens, is relatively frequent when life is prolonged far beyond the allotted span. It is with the latter cause of blindness, cataract, that the surgeon is more frequently concerned.

This being a fairly common affection of latest life, and the only method of treatment as yet known to science being operative removal, the extent to which age should influence our prognosis becomes a very practical question. It would be difficult for one unfamiliar with the subject to realize how much both patient and family physician are apt to be misled by the feeling that the operation for cataract is not worth undertaking after a certain age. While the chances of success are popularly underestimated, the effect of the operation and confinement on the patient's general health are apt to be unduly exaggerated, and many an individual has spent his closing years in blindness which might have been greatly alleviated, if not entirely removed.

Mr. Higgens has recently published in the *Lancet* (No. 3702) a list of patients, the youngest over eighty, on whom he has operated for cataract. Among 925 cases he has found 19 who could be embraced in this category. He cites 17 cases of entire success, one of failure, and one of partial recovery of sight.

Out of a smaller number of cases of cataract I am able to give a larger number of aged patients. And although my statistics of success are not as brilliant as those of Mr. Higgens, I feel that an analysis of the histories, nearly all of which I have kept in full, will not be without interest. Cataract patients of this age are not met with every day. The longest professional career may embrace a relatively limited set of such statistics. It seems fitting that I should give in my own, as a contribution to that common fund of experience on which we are all so glad to draw.

I find that I have records of 34 cases of patients aged eighty or upwards in which I have operated for the extraction of cataract. With a single exception all these were operated on according to the method of Graefe. These I proceed to summarize in the order of their ages. There is one point to which I wish to draw special attention. The cases marked with an asterisk were treated after asepsis had become the rule in ophthalmic surgery, and it is perhaps hardly fair to compare the results here obtained with those of former years. The table is arranged simply according to age.

In explanation of the unrecorded results I would say that these cases occurred early in my practice, when the custom of making exact measurements of vision at the conclusion of the treatment was not yet fully established. These results sum up as follows:

Entire success	29 (85%)
Partial success	2 (6%)
Failure	2 (6%)
Unrecorded	1

Entire success was estimated at an amount of vision equalling one-tenth and over, the usual standard. The two partial successes had each a certain amount of useful vision. The two failures retained perception of light, but gained nothing by the operation.

No.	Age.	Sex.	Duration of Treatment.	Resulting Vision. Remarks.
1	80	M	11 days	0.2
2	80	F	16 days	0.1
3	80	F	15 days	0.3
4	80	F	15 days	0.1
5	80	F	14 days	0.1
6*	80	M	14 days	0.5
7*	80	M	13 days	0.3
8*	80	M	68 days	0.1 (nearly). Much cortical substance left in pupil. Patient kept under observation while absorption was going on.
9*	80	F	13 days	0.2
10*	80	M	14 days	0.4
11	81	F	30 days	0.1. Severe iritis ensued.
12*	81	F	17 days	0.2
13	82	M	16 days	0.1
14	82	M	21 days	0.13
15	82	F	22 days	0.3. Iritis followed a blow on eye.
16	82	F	16 days	0.3
17	82	M	14 days	0.2 (nearly).
18*	82	M	14 days	0.2
19	84	F	22 days	0.05. Patient childish and uncontrollable.
20	84	F	14 days	Perception of light. Severe iritis.
21*	84	F	15 days	0.25
22*	84	M	13 days	0.4
23*	84	F	14 days	0.1
24	85	M	?	0.05. Severe iritis.
25	85	F	27 days	Regained power of reading and writing; exact vision not recorded.
26	85	F	19 days	0.3
27	85	M	13 days	0.5 (nearly).
28	86	M	60 days	Regained power of reading; no record of exact vision.
29	86	M	17 days	Result unrecorded.
30	86	M	17 days	Regained useful vision.
31	87	F	10 days	0.2 (nearly).
32	87	F	21 days	Perception of light; pupil blocked at time of discharge; did not return.
33	89	F	12 days	0.35
34*	89	M	14 days	Recent operation; patient still under observation; can tell time by his watch, and the case is evidently a success.

Patients of eighty and upwards form a very inconsiderable proportion of the cases of cataract that come within the experience of the average ophthalmic surgeon here in New England. According to my estimate they amount to about six per cent. of the whole number. It would seem that six per cent. of total failure, large as it would be between the ages of sixty and seventy-five, as contrasted with 85 per cent. of success, does not form a valid reason for denying the operation to those advanced in years. The use of cocaine renders ether unnecessary, and the senile eye is moreover much less sensitive than in youth or even middle age. Under ordinary circumstances the confinement lasts but a fortnight, the patient remaining in bed only the first day. With a prospect of the recovery of sight as good as these figures show, is it right to allow a fellow-being to pass the last years of life in blindness, deterred from the operation by an unreasoning and unreasonable dread of the effect of extreme age on the result?

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Clinical Department.

A CASE OF CANCER OF THE URETHRA.[1]

BY A. T. CABOT, A.M., M.D.

The rarity of a primary urethral carcinoma is my reason for putting the following case on record.

C. W. T., an elderly man, entered the Massachusetts General Hospital March 29, 1895, and gave the following history:

Thirty-five years ago he had gonorrhea, from which he entirely recovered. Nine years ago an abscess formed in the perineum through which, however, no urine passed. At that time the urine passed in a good stream, and he never noticed any trouble in urination until one year ago when he began to have some difficulty in passing water. He did not, however, have complete retention, and his condition improved somewhat under medical treatment. Nine weeks before entrance, a swelling appeared in the perineum which was painful, and confined him to bed. At the end of a fortnight it was lanced, and pus was evacuated from it. A week later the urine began to come through the opening. For a time after this he improved in his comfort; but then the swelling began to spread, and less and less urine passed through the natural passage, until all of it came through the fistulæ. Examination showed the perineum to be occupied by an indurated mass extending forward beneath the scrotum, with two fistulous openings over it. The urethra was impervious to instruments, even of the smallest size, all of which were arrested at about the peno-scrotal angle.

On April 1st, the perineum was widely laid open, considerable pus being evacuated from various side pockets. The walls of the abcess were of such a sloughy character that nothing unusual was noticed at that time in the character of the case. A drainage-tube was carried through the cavity of the abscess and was brought out in front of the scrotum. The greater part of the induration cleared up in a few days, but there still remained a hard sloughing mass at the bottom of the cavity about the urethra.

Ether was again administered on April 15, 1895, and a careful examination showed this hard tissue to be distinctly of the character of a neoplasm. It extended forward to the peno-scrotal angle and backward to just anterior to the triangular ligament. The prostate was slightly enlarged, but not more than is usual in a man of his age.

A piece of the new growth was cut out for examination. Dr. W. F. Whitney, who kindly examined it, reported as follows: "The bulk of the fragment is composed of large solid masses of rather small, slightly cylindrical epithelial cells, separated by a relatively narrow stroma of vascularized connective tissue. The central parts of the epithelial masses, which have a more or less branching character, have undergone necrosis." The tumor was thus shown to be a cancer, of which the cells were small and cylindrical in character.

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[1] Read before the American Association of Genito-Urinary Surgeons, at Niagara Falls, May 30, 1895. Microscopical sections of the growth were shown to the Association.

Its origin from the urethral mucous membrane, or from some of the glands associated with it, was made clear by the anatomical relations found at the operation. The tumor was separated by a wide interval from the skin and did not extend in either direction beyond the perineal portion of the urethra.

As regards treatment, the case came under observation too late to admit of any possibility of eradicating the tumor by operation and the escape of urine was perfectly free and painless after the perineum had been freely laid open. The only further treatment was directed to keeping the urine in a bland and unirritating state by the use of benzoate of soda and to diminish the discomforts of the sloughing mass in the perineum by the use of antiseptic applications.

Dr. F. Tilden Brown, in the preparation of his article upon urethral diseases, in "A System of Genito-Urinary Diseases," etc., was able to find but five recorded cases of urethral carcinoma:[2] those of Schustler, Thiersch, Guyon, Tyzebicky and Guiard. In four of these, exact post-mortem and microscopic examinations were made, and in all four cases the urethral cancer was found situated in the perineal portion of the canal. In Schustler's and in Guiard's cases the perineal swelling simulated an abscess and led to incision. These two cases were very like the one just reported.

In these cases, also, the carcinoma had undergone colloid degeneration and softening. In the case that I have reported, a marked feature was the tendency to necrosis of the cells in the centre of the masses of epithelium. This was easily explained by the scanty supply of nourishment supplied by the sparse connective-tissue network.

Brown says: "The origin of urethral cancer is from the urethral mucous membrane, and Thiersch has drawn attention to the possibility of its originating in the region of a stricture. Poncet and Paget record cases in which the carcinoma seems to have originated from the margin of an old fistula."

Although in my case there had once been an abscess, this had not resulted in a fistula and there had been no evidence of a stricture, although one of large calibre may have existed. The cylindrical character of the epithelial cells suggests the possibility of the disease having started in one of the mucous glands (of Littre); but the fact that the epithelium that covers the urethral mucous membrane in the bulbous portion of the canal is rather cylindrical in shape, leaves us unable to argue anything from the character of the cells.

While undoubtedly a cancer of the deep urethra is a great rarity, I can remember one case of cancer of the penis in which the disease seemed to have started in the region of the fossa navicularis. In this connection, too, it may be interesting to put on record a case in which a cancer of the prostate extended forward into the urethra.

D. A. P., an old gentlemen of seventy, had been troubled for ten years with some difficulty of urination. In September, 1894, this difficulty became much aggravated, and the straining to pass water became extreme. In November he began to suffer pain through the penis and rectum, and considerable burning as the water passed.

I first saw him February 4, 1895. He was then a thin, frail-looking man. The bladder at this time formed a distinct elastic ball above the pubes. The prostate was found to be very large and nodular. A diagnosis of probable malignant disease of the prostate was made, and the use of a catheter advised. He returned to the care of his regular physician, Dr. Frank Blaisdell, of Goffstown, N. H., and was for a time somewhat more comfortable.

I saw him again in consultation with Dr. Blaisdell, May 16, 1895. He was using the catheter twice in the twenty-four hours, and getting five or six hours of ease after its use. The examination now showed the prostate to be still larger and more nodular than at the previous examination. The point of especial interest was that at this second examination, I found a nodular hard mass, from three-fourths of an inch to an inch in diameter, extending forward along the urethra through the perineum and to the perineo-scrotal junction.

This is the only case in which I have observed the extension of malignant disease forward from the prostate along the urethra. The tendency in other cases that I have seen was to extension backward into the bladder.

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Reports of Societies.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

SEVENTEENTH ANNUAL CONGRESS, ROCHESTER, N. Y., JUNE 17-19, 1895.

(Concluded from No. 12, page 301.)

TUBERCULOSIS OF THE UPPER AIR-PASSAGES.

A DISCUSSION on this topic was opened by DR. JONATHAN WRIGHT, of Brooklyn, who spoke of Etiology.

Recent advances in bacteriology have compelled modifications in the postulates so boldly enunciated by Koch some years ago. We now know that bacteria can penetrate epithelial surfaces, and that in the body some of them are destroyed by phagocytosis and others by fibroid induration which they themselves occasion. It is possible that tubercular infection may occur through the lymphoid tissue at the base of the tongue. Tuberculosis is a frequent disease, as is shown by the revelations of the autopsy table; but its mortality is due not so much to the bacillus as to the unhealthy environment in which many of its victims live. Doctors constantly meet with it, and yet the mortality-rate from tubercular disease is not high.

As to laryngeal tuberculosis, the corrosive sputa theory of Louis has been long abandoned. Pyogenic cocci first make a breach through the epithelium, and then the bacillus enters. The latter does not of itself cause abscess. The larynx, moreover, is protected by the peculiar wavy arrangement of its epithelial layer especially in the inter-arytenoid space, so that its lining can stretch during vocal strain without causing a solution of continuity. Tuberculosis of the pharynx occurs in acute miliary tuberculosis or in the later stages of lung diseases as does also nasal infection.

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[2] At the time that this paper was read Dr. R. W. Taylor cited a recently reported case of Oberländer's in the International Centralblatt.

Dr. E. L. Shurly spoke of the Medical Treatment.

He enumerated a large number of remedies which have been used in this disease. Locally, ice, rest of voice, chlorine gas, solution of sodium formate, and iodoform are in his judgment of positive value; also oil of cloves and oil of castor. Gavage will fortify the system, and it also reduces fever. We should give vegetable and animal diet together, and never the latter alone. Alcohol is generally irritative in laryngeal tuberculosis. We should not take away hope from our patients. A mixture of eucalyptus, cocaine and morphine will greatly relieve the painful dysphagia.

The Surgical Treatment of Laryngeal Tuberculosis was discussed by **Dr. J. W. Gleitsmann**, of New York, who confined his remarks to curettement. He has found on record eight cases of total and seven of partial laryngeal extirpation for tubercular disease. In four of the former, diagnosis was made before operation, two were done for lupus, and two were regarded, before being attacked, as carcinomatous. In the latter, five were for tuberculosis one for lupus and one for supposed carcinoma.

Curettement does not, of course, exert a favorable influence upon accompanying lung disease. We are, however, justified in calling a laryngeal case cured when, even if the lung process continues, the laryngeal symptoms disappear, the parts assume a normal appearance, and the post-mortem shows a complete absence of local disease.

Indications are as follows:

(1) Primary tubercular lesion with untouched lungs.

(2) Cases with lung disease which is incipient or has not gone on to softening and hectic.

(3) Circumscribed infiltrations or ulcerations.

(4) Dense, hard, arytenoid swellings, ventricular bands on posterior wall, tubercular tumors or lesions of the epiglottis.

(5) Cases even with advanced lung disease, with distressing dysphagia from arytenoid infiltration.

Curettement is contra-indicated:

(1) In advanced lung disease and hectic.

(2) Disseminated laryngeal tuberculosis leaving little or no healthy tissue.

(3) Extensive infiltration, producing stenosis (here tracheotomize).

There is no proof that the operation has ever hastened the lung process. Cocaine will subdue pain and a mixture of lactic acid and liquor ferri chloride will arrest hemorrhage, which is generally very slight. The operation must be looked upon as analogous to the excision by the surgeon of a tuberculous joint. We remove a constant source of further systemic poisoning. The double curette easily removes the arytenoid swellings, which constitute the great cause of dysphagia.

As to technique, Heryng's single curettes are best for scraping and cleaning off ulcerations; Krause's double and Heryng's rotary instruments, for removing infiltrations; Scheinmann's forceps for sub-glottic lesions; and laterally-bent forceps for the laryngeal ventricles. Post-operation rest is absolutely necessary. Cicatrization occurs in from one to four weeks; and until it is complete daily applications should be made of lactic acid or pyoktain in two-per-cent. strength. Better results are reached in well-defined though deep ulcerations than in shallow and more extensive ones: dense infiltrations (generally localized) do better than conditions of edema.

Dr. Gleitsmann's personal statistics are as follows: Total number of cases, twelve, all with lung disease; infiltration of posterior wall alone, two; of posterior wall and ventricular band, one; arytenoidectomies, four; same, with excision of ventricular band, three; excision of the band alone, two. In two, a second arytenoidectomy was necessary on account of recurring infiltrations. One died from heart-failure, and another from advanced lung disease. Four were without recurrence from six to ten months after operation. Of the latter group, one had an affection of the posterior wall, another of the ventricular band, and two of the arytenoid region.

THIRD DAY.

DISCUSSION ON TUBERCULOSIS OF THE UPPER AIR-PASSAGES.

This discussion was continued from the session of the previous day.

Dr. T. Morris Murray, of Washington, had seen some good results from lactic acid in laryngeal and pharyngeal ulcerations. One case had remained healed for five years.

Dr. Ingals thought that the number of cases for surgical operation was a very limited one. Some cases recover under very simple measures, but in the deeper cases we must curette. It is, however, of doubtful propriety to cut away large masses of tissue. Terchloride of iodine (one to three grains to one ounce) in solution will heal some cases of ulceration. He does not like to use cocaine, from its effects on the nervous system. Moreover, after its use, patients are less able to stand pain than before. His favorite laryngeal sedative is a mixture of tannic and carbolic acids with morphine.

Dr. Daly has seen cases heal under iodoform, with which he saturates the patients.

Dr. A. B. Thrasher, of Cincinnati, followed with a paper on

NECROSIS OF THE MIDDLE TURBINATE.

This is a rare condition though ethmoid disease is a common thing. The position of the middle spongy bone and its relation to the natural openings of all the accessory sinuses makes its diseases a matter of much significance. The sinus fluids becoming pent up rapidly grow purulent.

There is no reason, apparently, why necrosis of the middle turbinate should not be more common. The development of polyps in this region from a membrane bathed in the secretion from a purulent ethmoiditis is quite analogous to aural polypi growing in the purulent discharge of an otitis media. Cysts of the middle turbinate do not necessarily lead to necrosis. Two clinical histories were given.

Case I. Woman with severe pain on left side of nose, spreading over same side of face and head, constant, but with periodical exacerbations, and referred to a severe influenza one year before. Creamy pus escaped from under the left middle turbinate, the anterior extremity of which was swollen, and pressed on the septum and lower turbinate. The projecting mass was removed by a cold snare and found to be necrosed.

The adjacent ethmoid cells were curetted, and there had been no recurrence in four years.

Case II. Male, aged twenty-six, with severe infra- and supra-orbital pain for two years. The right middle turbinate appeared as a large round mass, pressing out the nasal wall and filling up the middle meatus. On attempting removal with snare, it crushed, leaving a large cystic cavity. The bony fragments removed appeared necrosed. No opening was detected between cyst and ethmoid cells.

The general symptoms of this affection are (1) pain (infra- or supra-orbital) in orbit itself, and occasionally in ear; (2) discharge often offensive; (3) nasal obstruction and anosmia, but in some cases of even severe disease of the middle turbinate the breathing is not impeded; (4) obstruction of accessory sinus openings; (5) external deformity (even in orbit with concomitant ethmoidal disease); (6) various reflex neuroses.

Mild or recent cases may be cured by alkaline sprays, cocaine, scarification or incision. In older and more chronic cases, the removal of the offending mass is indicated with either cold snare, drill, trephine or serrated scissors.

Dr. Thrasher also reported a case of

CONGENITAL OSSEOUS OCCLUSION OF THE NARES

occurring in a male infant of eighteen months, well nourished but a mouth-breather, with a muco-purulent discharge from right nostril and adenoids in vault. A thin bony partition existed just at the posterior choana, and it was easily broken through with a curette.

Dr. Ingals had seen no congenital cases. He thought partial occlusion of the posterior nares very common in adenoid cases, and always made it a rule when operating for the latter condition to pass a probe or other instrument into the naso-pharynx before the patient came out of the anesthesia to determine the patency or non-patency of the nostrils.

Dr. Newcomb had recently removed with a cold snare and without hemorrhage a cyst from the naso-pharynx of a young man aged twenty. A portion of the growth still remained to be extirpated, and he thought that perhaps he had a multilocular condition to deal with.

Dr. S. W. Langmaid had recently removed by avulsion a fibro-cyst of the naso-pharynx, the attachments of which forbade the use of the wire snare. No hemorrhage occurred. Recurrence of these growths was perhaps due to the fact that a portion of the cyst wall was left behind at the time of his first extirpation.

RELATION OF VASO-MOTOR DISTURBANCES TO DISEASES OF THE UPPER AIR-TRACT.

This topic was discussed by **Dr. W. H. Daly**, of Pittsburg. He reiterated his well-known views, speaking of the usual turgescent condition so frequently found in catarrhal and hay-fever conditions and of the pallid variety where we had a leakage of serum from the parts. He was able to report a cure by intra-nasal treatment in 63 per cent. of asthma cases due to the catarrhal condition, and in 40 per cent. of the spasmodic variety. He concluded that

(1) Abnormal disturbances of a vaso-motor nature may be primary or secondary.

(2) Both may be coactive and progressive.

(3) The surest and quickest relief is afforded in those cases in which surgical interference finds a proper election.

Dr. Mulhall thought that there were two kinds of vaso-motor disturbance, the pallid and turgescent, just as anger makes some people grow white and others red in the face. Diet and exercise will frequently relieve these cases without any further treatment. He advocates cold-water frictions, mild galvanism, atropia to be taken mornings on an empty stomach, and one-drop doses of Fowler's solution after meals.

Dr. Simpson thought that in many instances the reflex theory was false, as we would find on through examination of our cases some causative lesion near the seat of the disease we had to treat.

THE CIGARETTE HABIT.

This was the title of the closing paper of the Congress read by **Dr. J. C. Mulhall**, of St. Louis.

The evils of cigarette smoking are largely due to the habit of inhaling, and therein this method of using tobacco differs from all others. The smoke does not go below the first division of the bronchi. The result of inhalation is, physiologically speaking, a pleasurable irritation of the laryngeal and tracheal filaments of the pneumogastric nerve — a sort of nicotine satisfaction. This is in amount according to the absorbing surface, which from the added laryngeal and tracheal areas has been estimated to be three times as great in inhalers as in non-inhalers.

An inseparable evil from cigarettes is the frequency with which they are smoked. Hence the "deadly" habit. The effect of this frequent smoking of a small amount of tobacco is comparable to the mere acid effect which we can obtain by giving a definite amount of drug in divided doses. The constitutional effects are those of tobacco in any form, and upon the young they are especially pernicious. Cigarettes may be said to teach the use of tobacco. They are cheap and easily procurable. Moreover, the first cigarette never nauseates as does the first cigar. Locally they may aggravate a pre-existing sore throat, but they do not themselves cause any throat disease worthy of the name. Nothing occurs beyond a slight hyperemia, with perhaps an insignificant catarrh. An occasional bronchial râle may be heard, and sometimes a pearly, viscid drop of mucous is expelled by a single effort of coughing.

Dr. Ingals differed from the writer of the paper as to the harmlessness of tobacco. He had seen it produce a distinct tracheal cough.

Dr. Seiler thought that much of the local effect of tobacco came from the frequent habit of spitting, particularly with cigar and pipe smokers, whereby an abnormal dryness of the pharynx was brought about.

Dr. Langmaid believed it possible to tell by the color of the pharyngeal mucosa whether a man smoked or not. The especially bad effect of tobacco on the young lies in the fact that it destroys the habit of consecutive thought by means of its insidious narcotism.

During the Congress the following papers were read by title: "Foreign Bodies in the Esophagus," by Dr. Harrison Allen, Philadelphia; "The Influence of Chronic Diseases of the Throat upon Certain Defects of Speech," by Dr. D. Bryson Delavan, of New York; "Is Acute Tonsillitis in any way dependent upon the Rheumatic Diathesis?" by Dr. Geo. B. Hope, New York; "Cyst of the Maxillary Sinus," by Dr. Charles

H. Knight, of New York; "Pemphigus of the Pharynx and Larynx," by Dr. M. R. Brown, Chicago; "Compensatory Arytenoid Movement," by Dr. Wm. Porter, St. Louis; "A Study in Diphtheria," by Dr. S. Hartwell Chapman, New Haven.

The following gentlemen were elected to Active Fellowship: Drs. J. E. H. Nichols and F. E. Hopkins, of New York, J. E. Boylan, of Cincinnati, and Thomas Hubbard, of Toledo.

Pittsburg, Pa., was chosen as the next place of meeting, the time to be determined by the Council.

The following officers were elected for the ensuing year: President, Dr. W. H. Daly, Pittsburg; First Vice-President, Dr. Jonathan Wright, Brooklyn; Second Vice-President, Dr. O. W. de Roaldes, New Orleans; Secretary and Treasurer, Dr. H. L. Swain, New Haven, Ct.; Librarian, Dr. J. H. Bryan, Washington.

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AMERICAN NEUROLOGICAL ASSOCIATION.

TWENTY-FIRST ANNUAL MEETING, BOSTON, JUNE 5, 6 AND 7, 1895.

FIRST DAY. — MORNING SESSION.

THE President, Dr. PHILIP COOMBS KNAPP, of Boston, delivered the opening address.[1]

DR. J. ARTHUR BOOTH, of New York, read a paper on

HYSTERICAL AMBLYOPIA AND AMAUROSIS — REPORT OF FIVE CASES TREATED BY HYPNOTISM.

Hysteria we might define as such a condition of the general nervous system, original or acquired, as rendered it capable of simulating most local diseases, of complicating them in their progress and modifying them in their associated phenomena. This special form, not due to alcohol or tobacco, was by no means common. The onset, usually sudden, followed some shock either mental or physical. The globe of the eye did not present anything abnormal, except in a certain number of cases some anesthesia of the cornea. Media, lens, vessels and fundus normal. The patient complained of defective vision, supra-orbital pain and great sensibility to light. There might be absolute loss of sight in one eye. Also local and general symptoms of hysteria.

CASE I. Amblyopia, contraction of the fields of vision, restored after twelve seances.

The patient, age sixteen, single, was seen first June 12, 1894. Always nervous; otherwise no trouble until appearance of menstruation two years ago. During the first year suffered much pain each month. For the past year menstruation irregular, now absent two months. During past six months patient much depressed, emotional; had two convulsive seizures of hysterical nature. One month ago brother committed suicide, and immediately after this she noticed failure of vision, at times becoming entirely blind for a few seconds.

No organic lesion of the nervous system discovered. Any attempt to examine the eyes caused spasmodic closure of the lids. Pupils moderately dilated, and reacted normally. Vision of right eye twenty-fifteenths; left, twenty-fortieths. Fields of vision very much contracted. After seven seances, fields markedly improved. Treatment by suggestion continued until August 15th, when the patient was discharged with perfectly normal fields, and vision perfectly restored.

CASE II. Amblyopia, contraction of visual fields. Improvement after six seances.

The patient was a male, age twenty-eight. General health good up to eighteen months ago. After business troubles and excesses, became depressed and nervous. Six months ago periods of temporary blindness. Two months later vision blurred, which condition persisted when first seen March 29, 1895. Never diplopia. During last month more or less occipital headache. Emotional. Gets confused sometimes. Urine normal. At one time herpes preputialis; and, being told it was due to syphilis, he thought all the symptoms due to this disease. Stands well with eyes closed. Knee-jerks equal. Speech normal. Pupils equal. Muscles all act well. Optic nerves and retinal vessels appear perfectly normal. Visual fields very much contracted. No loss of color perception. No loss of power. Hypnotized. Treatment continued two weeks, resulting in disappearance of many symptoms. Visual fields still somewhat contracted. On April 12th, more or less pain of the abdomen for several days. Passed a number of links of tænia. Proper treatment instituted. Two worms obtained with heads. Three days later, eye symptoms all disappeared. Visual fields normal and have remained so.

CASE III. Monocular blindness, cured in five seances.

The patient, age thirty-eight, married, was seen November 23, 1892. Perfectly well until one month ago, about which time became depressed, and had a number of crying spells. Three weeks later, pain in the left eye, accompanied by blurring of vision, which gradually increased until for three days past there was complete blindness in this eye. Three healthy children. No miscarriages. Complete loss of vision in the left eye. Vision in right eye normal, pupils active and normal in size. No color paresis. On exposing eyes to a bright light, there was a certain amount of photophobia. Ophthalmoscope showed nothing abnormal. With exception of slight amount of anesthesia of the cornea, no sensory changes. Hypnotized. November 25th, recognized a clock on the wall, twelve feet distant. Pain gone. December 9th, perfectly well, no pain, vision entirely restored.

CASE IV. Monocular blindness.

The patient was an Armenian, age eighteen, married, two children, no miscarriages. Fairly well up to past month. At this time became depressed, emotional; complained of lump rising in the throat. Few days ago some headache and failure of vision in the left eye; could not distinguish any object at any distance. Can distinguish light from darkness. Anemic. Pupils moderately dilated, left not reacting as actively as right. Fundus normal. Diagnosis of functional amaurosis made. Hypnotized. Complete recovery after six seances.

CASE V. Monocular blindness. No improvement by any treatment.

The patient was fourteen, single. Perfectly well up to eighteen months ago. Fell on the ice, striking the back of the head. Did not vomit or lose consciousness; was frightened and jarred. Menses appeared shortly after; never regular. Two months after the accident, headache — chiefly frontal, sometimes in occiput and back of neck. May 5, 1894, under treatment for dimness of vision. Almost total loss of vision in the right eye without change of the fundus vessels or discs. In the hospital had two epileptoid attacks hysterical in character, and frequent crying-spells. Treatment with strychnia, iron, etc.; no improvement. Complete loss of vision in right eye. Field much contracted in all directions. In a moderate light pupils dilated, right little larger. Marked loss of sensation of the right eye. No anesthesia of the face, body or extremities. Colors recognized. Knee-jerks exaggerated. Hypnotism tried and failed.

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[1] See Journal, vol. cxxxii, No. 23, p. 557.

Amblyopia or amaurosis in hysteria might be light and temporary or severe and long. If the condition persisted any length of time and alteration of nutrition or any morbid process be set up by prolonged disturbance, it was probable that the condition would change into amaurosis from inflammation or congestion. This latter condition he believed had taken place in Case V.

He thought we possessed in suggestion an important aid in the treatment of this condition. He recommended its use early, instead of waiting to try other methods.

Dr. Dercum, of Philadelphia, said that the fact that in all these cases the color perception was normal, was interesting in view of the statement of certain foreign and American observers, that in hysteria the color field was very often reversed. In his own experience this reversal was not as common as we had been led to think.

Dr. Prince, of Boston, asked whether Dr. Booth had made tests while the patient was hypnotized to ascertain whether the patient really recognized objects which were claimed not to be seen in the waking state. He referred to the experience of a French observer who showed that a certain proportion of these hysterics with apparent blindness were not really blind. He had demonstrated in a certain number of cases in hysterical people that loss of vision, of hearing, of sensation did not exist in reality. In regard to the pathology of these cases it seemed to him that the sensory nerves were not connected with that portion of consciousness which was awakened at the moment, but that in the hypnotic state that connection returned. He doubted whether that was an universal law. He also believed that the person with monocular blindness had that blindness so long as one eye was open, but had binocular vision when both eyes were open. If that were true the ordinary tests for the detection of simulation and persistence of blindness were not applicable to cases of hysteria.

Dr. Booth, of New York, said these cases were thoroughly tested for binocular vision, and in the cases of monocular blindness they all showed that they did not have binocular vision with the prism test.

Dr. Walton, of Boston, said he agreed with Dr. Prince regarding the probability of hysterical amaurotics really seeing more than they realized they did, through lack of activity of the higher centres. When, however, we had to deal with medico-legal cases, it was not a sufficient demonstration of genuineness to prove that the patient saw what he claimed that he did not see. There was a link wanting in the chain of evidence, even if we acknowledged that he was not necessarily simulating, but might be a victim of hysteria. It seemed to him we were in danger of regarding cases as genuine hysteria because they followed certain types, whereas the variations of hysteria were so great that hardly an anomaly could be imagined which might not be included under this diagnosis. For example, none of Dr. Booth's cases saw with the blind eye when binocular vision was tested by prisms, a condition the exact converse of that described by Dr. Prince.

Dr. George J. Preston, of Baltimore, described

A CASE OF TOTAL HYSTERICAL ANESTHESIA IN THE MALE.

Loss or alteration of sensation was a most constant characteristic of hysterical stigmata. Total anesthesia was very rare.

The patient, age thirty-one, was a plasterer, family and personal history unimportant. A fairly temperate man. Christmas night had been drinking, and was kicked in the face. Some slight ecchymosis about the face. Breathing very rapid for a day or two. The day after entrance a patch of anesthesia in the left parietal region was noted. There had been no injury to this part of the scalp. General anesthesia developed. Tactile and pain sense lost, cornea insensitive, temperature sense gone, and muscular sense impaired. The patient not able to distinguish between quinine and sugar. Unable to distinguish between various odors. Hearing impaired. Marked constriction of the visual field and reversal of the color fields. The visual fields examined a great many times with great care. Superficial and deep reflexes normal. Electrical reactions normal. Patient was hypnotized on January 28th, and while other suggestions were potent, the suggestion that sensation had returned had no effect. Hypnotized several times a week, and same suggestion made. By middle of April marked improvement. Visual field cleared up rather gradually. At present he has regained normal sensation in all respects. No suspicion of the genuineness of the case.

Dr. Jacobi, of New York, said he had seen a number of cases of hysterical anesthesia, particularly among the insane. He has had a case recently in a girl who had anesthesia over the entire surface of the body, was partially deaf, taste affected, sight not affected. With eyes closed there was absolutely no sign of ataxia in the case, which seemed an interesting observation. He had observed that women with total anesthesia of the skin presented points of pain upon deep pressure. The fact that notwithstanding the anesthesia and analgesia of the superficial tissues, there should be pain upon deep pressure seemed to him rather characteristic of hysteria.

Dr. Walton, of Boston, said that it had been claimed that a patient could not be simulating because the visual fields taken at different times always corresponded. That was in line with the view already advanced that constancy of anesthetic boundaries, pressure on the dynamometer and similar tests established genuineness in claimants for damages. He was not prepared to accept that dictum. When we considered the variations of anesthetic boundaries, dynamometric pressure and visual fields often found in genuine cases, variations for which we must make due allowance before we declare a claimant a fraud, we should not be too hasty in regarding a case genuine because his answers come within these limits, nor even necessarily because he maintained the greatest exactitude. His own tests would lead him to believe that an intelligent and practised simulant could maintain even greater constancy in some of these subjective tests than the average genuine patient is likely to do.

DR. LESZENSKY, of New York, said that it was impossible even for an ophthalmologist to simulate successfully regarding the parametric chart. There were many means by which simulations might be overcome.

DR. PUTNAM, of Boston, said that the point raised by Dr. Walton was real and practical. No one who studied these cases much thought that they were absolute. There was no doubt that the hysteric varied from day to day under various circumstances. Having seen vast numbers of these cases and putting the comparatively accurate information we got from these tests, together with what we knew of the laws of hysteria and the laws of the person in health, we did form, it seemed to him, in almost every case an accurate judgment. Persons in health were what one might call hysterical to a certain degree. The explanation of the peculiarities of the field of vision depended largely upon certain methods of attention, and one saw evidences of that attention or lack of attention in daily life.

DR. PRESTON, in closing and in answer to questions, said that there was no disturbance of motion in this case. The muscular sense was only slightly impaired. The man possessed a relatively good idea of the position of his limbs. He had seen two cases somewhat similar to the ones Dr. Jacobi alluded to, one clearly insane in which there was total anesthesia, and in the other case he was unable to say whether the anesthesia was purely hysterical or not. As to the point raised by Dr. Walton as to the importance and usefulness of the visual test, he thought it the best test we had, and that it could not be successfully simulated. He agreed with Dr. Putnam that we were to judge of hysteria by the *tout ensemble*. To specialists it was the general impression the case made, and not any single symptom or set of symptoms. We were too apt to forget that hysteria had nothing to do with the peripheral organs. The peripheral organs might send in all sorts of stimuli, but they were received and interpreted in very different ways. While we were ignorant of the true pathology of hysteria, we knew that the disturbance was more or less transient, that under the influence of certain strong stimuli the cells might be made to functionate. The cell might very rapidly regain its power, so that in considering the genuineness of the various symptoms he thought we were liable to regard the peripheral rather than the central organs.

(To be continued.)

TER DIE. — It is not always good to be too curious, especially if you happen to be a hospital patient. One such was greatly concerned about what the physician wrote on the card at the top of his bed. While the nurse was not watching he took down the card, and immediately set up a great hullabaloo, groaning and sobbing in a dreadful manner. The nurse came to him asking him what was the matter. "Oh dear, oh dear!" was the response, "I've got to die!" "What is it? Do you feel worse?" asked the nurse in tender tones. "Not particular, mum, but I've got to die. The doctor has wrote it on my ticket." The poor fellow had so interpreted "ter die," and it was difficult to calm his fears. — *Exchange.*

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THE LAW OF COMMITMENT OF THE INSANE.

AMONG the notable papers read at the recent Medico-Legal Congress (a somewhat heterogeneous gathering) in New York City, was one by Albert Bach, a lawyer of New York, on the necessity of greater care in the commitment of the insane. It was alleged that the laws of New York State are especially lax in this particular. The ground was taken that it is possible under existing conditions, not only to commit a sane person to a lunatic asylum, but also to release from confinement a dangerous lunatic. It was argued that a law which permits incarceration in an asylum upon the mere certificate of two physicians, without any hearing of the accused, is contrary to the constitution of the United States.

Mr. Bach insisted that such commitments should never be made except after a full hearing by a judge of a court of record or a jury, with full notice to the accused, and, if practicable, in his presence, and at said hearing the accused must be represented by counsel. The notice to the accused should put him in possession of all the facts and charges, including the grounds and reasons for attempting to have him committed, with the names of his accusers. It should be the rule of the court to appoint alienists of undoubted eminence to pass upon the question of the sanity of the accused, and it was urged "that the utmost publicity is conservative of the ends of justice, and is of more consequence than the wounding of sensitive feelings by the notoriety of the publication."

We have practically in this State the principal legal provisions and restraints on whose importance Mr. Bach so much insists; and where the requirements of our laws are faithfully carried out, the danger of improper commitments is really very slight. It is not true that in Massachusetts a person can be sent to an asylum solely on and because of the sworn statement of two physicians that he is insane. Much prominence is given to the part of the judge, in said commitment; the latter must be an officer of a judicial, probate or police court, and on him devolves the responsibility of the issuance of the committal papers and of any hearing or investigation that may be deemed necessary; said judge is required by law to see and examine the person alleged to be insane or to give a satisfactory reason why he has not done so. The statute also provides that the judge, as far as he deems it practicable or desirable, shall give the accused a hearing. The summoning of a jury is to be left to the judge's discretion.

It is apparent that in the great majority of instances, all this cumbersome court and jury machinery is altogether unnecessary; much expense and delay would be thereby occasioned, and this especially when expert alienists are summoned; and it has been found that practically the interests of the community are better subserved by leaving it to the judge's discretion whether a jury shall be called and a public hearing given to the alleged lunatic and his attorney; and thus there is a minimum of the "red tape" methods complained of in legal transactions. Where the individual to be committed is a pronounced dement or a furious maniac any public hearing, with serving of papers, etc., would be little better than a farce. In difficult cases of paranoia with cleverly concealed delusion, the opinion of the ordinary juryman would be of but little value as compared with that of the physician who has watched the case day after day. The simpler the legal machinery, the more satisfactory oftentimes the execution of the law, as is exemplified in the superiority of the present medical-examiner system in this State over that of the coroner and jury which it superseded. As there are occasionally cases which the medical examiner must refer to the courts, so in vexed question relating to the commitment of an insane person the judge may have to call in the help of experts, or order a full public hearing or trial. To make such cases the rule rather than the exception would be to accomplish by roundabout, cumbersome and expensive methods what can be better accomplished by direct, simple and much more expeditious means.

Concerning the mental condition of the majority of persons who are sent to asylums there can be little or no doubt, and "expert" opinion is not necessary. While the law on our statute-books leaves large discretionary power to the judge in any given case, he cannot issue a warrant for the arrest and committal of a supposed lunatic till such warrant shall be countersigned by other authorities, as the mayor, selectmen or clerk of the overseers of the poor; and the commitment papers must contain the affidavits of two registered physicians "of standing, character, and professional knowledge of insanity satisfactory to the judge," and they must within five days have examined the alleged lunatic and certified to his insanity. It has been heretofore regarded as sufficient that the physicians making affidavit shall state that in their judgment said person is a lunatic and a proper subject for treatment and custody of one of the State lunatic hospitals; they were not required to give the reasons for this opinion. It has therefore been possible to commit as a lunatic a person not a "lunatic," but only an inebriate (registered as a "dipsomaniac") for purposes of reformation; this is probably a perversion of the objects for which insane asylums were created. It will, however, be less easy in the future to send "dipsomaniacs" to asylums of lunacy, as the new blanks issued by the State Board of Lunacy and Charity, now coming into general use, will not favor such committals, as any one familiar with these forms well knows. These blank forms, though not absolutely obligatory "to the exclusion of other suitable forms containing the required statement of facts" are destined to supersede the older forms, as the judges furnishing them are anxious to carry out the wishes of the Board of Lunacy and Charity. These forms require an explicit statement of the reasons why the doctors have adjudged the person to be insane, that is, by changed demeanor, and things said and things done, which are cited. It will be seen how much more difficult would be the certification by physicians of insanity in a doubtful case. "General impressions" will not do, nor will mere compliance "with the wishes of the family," or of a medical *confrère;* substantial reasons are demanded.

It has been objected that the new form is too prolix, imposing too much work on the doctors and making the commitment of a lunatic difficult, but the change is a step in the right direction, being another safeguard to the rights and liberties of the citizen. It is also to be noticed that the physician's fees have been raised to a standard commensurate with the extra work. This form first requires a statement of facts in answer to twenty-four questions, this statement embodying the entire previous history of the person for whom commitment is desired, the causes which led up to the insanity, the character of the insanity, the habits of the patient as to the use of liquor, tobacco, opium, etc. In this part there is not much variation from the form heretofore in use (Public Statutes, 1882). The two physicians are then required "to make oath and depose" as follows (we quote from the form provided by the State Board of Lunacy and Charity and ordered to go into effect May 19, 1895):

(1) That I am legally qualified to act as examiner in lunacy.

(2) That within five days prior to the date of this certificate, namely, on the —— day of —— 189–, I, the subscriber, personally examined with care and diligence A. B., a resident of —— in the State of —— and as a result of such examination, find and hereby certify to the fact that said A. B. is insane, and a proper person for care and treatment in some hospital, asylum or other institution for the insane, as an insane person under the provisions of the statute.

(3) That I have formed the above opinion upon the subjoined facts, namely:

(*a*) Facts indicating insanity, personally observed by me, as follows:

The patient said [Here state what was said to the examiners].

The patient did [Here state what the patient did in the presence of the examiners].

The patient's appearance and manner was:

(*b*) Other facts indicating insanity, including those communicated to me by others, are as follows: [State if there has been any change in the patient's mental condition and bodily health, and if so, what?]

(4) That the answers contained in the statement are true, to the best of my knowledge, information and belief.

The above statement, sworn before the judge, is accompanied by the endorsement of that official, and the other documents prescribed by the Public Statutes, and a copy of each physician's certificate of insanity is mailed to the State Board of Lunacy and Charity by the superintendent of each lunatic hospital and asylum within forty-eight hours after the commitment of each person adjudged insane.

These provisions for the commitment of the insane seem to us to meet the desideratum fairly well, while, doubtless, still susceptible of improvement. As for the possibility of the "release from confinement of dangerous lunatics," we believe that the rules governing our asylums in the discharge of patients render this danger one of almost infinitesimal proportions.

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ACNE AND THE SEBORRHEIC CONDITION.[1]

Individuals with an "acne skin," according to Schütz, are seldom affected by eczematous, vesicular and exudative cutaneous eruptions, while they are predisposed to a variety of affections of the sebaceous glands. This predisposition is often hereditary, so that the same form of acne, as well as of the secondary affections, is often found running through the members of the same family. In acne patients the skin is usually thick, with enlarged sebaceous glands, the hair of the head is strongly developed, and the brunette type is observed in 70 per cent. Acne in persons with red hair is extremely rare. He considers that acne is more common in those who dwell in cities. There is often a predisposition to nasal catarrh. In males the development of the beard is scanty in places, while in females there is a tendency to a growth of hair upon the lips or cheeks. The sweat secretion is often greatly increased, hyperidrosis of the hands and feet being frequently observed.

The question is asked, if the course of an acne affords any indication of the etiology. Acne vulgaris usually disappears spontaneously in time (in from ten to twenty years), or is converted into a new form. The development of acne pustules does not occur without order, but preserves on the average a definite type. A certain symmetry in their localization may often be observed. There is also a certain order observed in the general course of an acne, juvenile acne beginning upon the forehead and slowly progressing downward. The influence of the nerves upon glandular activity has been satisfactorily demonstrated. For these reasons Schütz considers acne vulgaris not an idiopathic process, but a reflex symptom of a mild, chronic disturbance of development, arising at the period of puberty. Just what this disturbance is we do not know, but the writer is inclined to believe that the development takes place too early, too slowly and incompletely. Comedones are regarded as not necessary for the production of acne, as they may occur in later years without a sign of acne. General disturbances, such as anemia, chlorosis, digestive disturbances, etc., are regarded as factors that may influence the course of an acne, but not as of general etiological importance.

To the complications of acne that are ordinarily accepted, such as comedones, milia and seborrhea, the writer would add, seborrhea sicca capillitii, falling of the hair, and finally, especially when the acne has run its course, eczema seborrheicum and other acne forms, such as acne rosacea.

These complications are so frequent that they form a picture, together with simple acne, which may be called the seborrheic condition. The acne is not always the first disorder met with, a seborrhea capitis having often preceded. Women are to some extent an exception to this rule. By regarding these affections, therefore, together, an important indication in therapeutics is obtained. It is seldom that we have to treat the acne alone — comedones, affections of the hair and seborrhea also claim attention.

The indications for treatment are local measures for the acne and the seborrheic condition, as well as prophylactic treatment to check them; the amelioration of general conditions which affect the course unfavorably; and the regulation of the developmental disturbances of puberty, as far as possible.

With regard to local treatment the writer rehearses the advantages of hot-water applications and the use of soaps, warning especially against soaps that contain glycerine, as he considers glycerine always contraindicated upon a seborrheic skin. Sulphur in the form of powder or mixed with water, and sulphur, naphthol, camphor and resorcin ointments are well spoken of. Animal fats are to be avoided as ointment base — vaseline, lanoline, and a mixture of the two, perhaps, diluted with liquid paraffine, being preferred. Pastes are effective, mineral constituents being preferred to starch and the vegetable powders. Salicylic-sulphur pastes, from two to ten per cent., are recommended for the mild forms; resorcin pastes, from five to fifty per cent., for the medium grades; and for the severer forms Lassar's naphthol paste.

For seborrhea sicca of the scalp, ointments of sulphur and salicylic acid are regarded as almost specific. It is seldom that stronger remedies, such as five to ten per cent. pyrogallic acid ointment, resorcin and chrysarobin ointments are needed. The writer regards eczema seborrheicum as auto-inoculable, and for this reason all parts of the skin must be taken into consideration and none forgotten. Daily changing of the underclothing is recommended and the avoidance of woollen garments next the skin. Considerable space is occupied in the consideration of the measures of general hygiene to be adopted, of the proper regulation of the diet and of the management of anemic and intestinal derangements.

Besides the juvenile acne that follows a descending course, and the acne rosacea of middle life that spreads centrifugally, the writer recognizes a third form that has been described by some authors under the name of acne menti or acne menstrualis. This form is usually indurated or of a small pustular character, which begins upon the chin, spares the outer portions of the face and in the course of time extends upward. This form is met with only in women and appears either at puberty or at the menopause. It is seen also about the alæ of the nose, and finally about the eyelids. It is usually accompanied by disturbances of the generative organs and has an exceedingly obstinate course.

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[1] Schütz: Arch. f. Derm. u. Syph., 1895, 2 Heft.

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MEDICAL NOTES.

YELLOW FEVER. — News comes from Florida through a vessel recently arrived at Pensacola, that both yellow fever and small-pox are prevailing at Pernambuco. There had been one death from yellow fever during the voyage.

WISCONSIN'S CHOLERA FUND. — The Legislature of Wisconsin has appropriated $50,000 as a contingent fund to be used by the Health Board, if necessary at any time during the next two years, to prevent the introduction of cholera.

BRUTAL ENFORCEMENT OF QUARANTINE REGULATIONS. — It is reported that a man suffering from small-pox was recently expelled from Arkansas and refused admittance into Mississippi. As he could not well remain in or on the Mississippi River until the disease ran its course, he attempted to evade the quarantine and land on the river bank in the latter State, but was shot and killed by one of the quarantine officers.

A SUPRA-RENAL EXTRACT. — It is reported in *Comptes Rendus* that M. Gourfein has succeeded in separating from the supra-renal capsules a toxic substance which seems to act as a potent depressant, inasmuch as the animals injected with it appear to lose strength and to fall down as if paralyzed, though they are not so, and death speedily follows.

THE COST OF A MEDICAL EDUCATION IN LONDON. — According to the *British Medical Journal*, the minimum cost of a medical education in London will vary between about $3,700 and $3,000 for the five years' course, according as one of the more expensive or less expensive schools is selected, vacation expenses not being included in the estimate. This would make the annual expense vary from about $800 to $600 a year without vacation expenses.

AN ARMY MEDICAL BOARD.— A medical board will be in session at Washington, D. C., during October of this year, for the purpose of examining candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination by the board will make application to the Secretary of War, before October 8th for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character and habits. The candidate must be between twenty-two and twenty-nine years of age, and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the board. Further information regarding the examinations may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

THE SHAZADA'S PHYSICIAN. — The Shazada, during his recent visit to England, was personally attended by Miss Hamilton, M.D., who furnished weekly reports to his father, the Ameer of Afghanistan, of his condition during his stay. Miss Hamilton is a graduate of the London School of Medicine, who so endeared herself to the Ameer by her attendance upon him during an attack of gout, that he would entrust the care of his son during his visit to foreign lands and climes to no one but herself.

NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During week ending at noon, September 25, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 77, scarlet fever 20, measles 4, typhoid fever 48.

KINGSTON WATER-SUPPLY. — It is reported that the water-supply of Kingston, Mass., is infected by lead. About twenty-five cases of poisoning have been observed, and there is general agreement on the part of physicians as to the source of the poison. The matter is now in the hands of the State Board of Health.

THE NEW MCLEAN HOSPITAL. — An invitation is extended by the trustees of the Massachusetts General Hospital and the physicians of the McLean Hospital to the officers of kindred institutions, the physicians of Boston, Belmont and elsewhere, and the town officers of Belmont to inspect the new McLean Hospital, Waverly, on Tuesday, October 1st, from eleven o'clock till three. Ladies are invited, and there will be a luncheon at half-past twelve o'clock. On Wednesday and Thursday, October 2d and 3d, from one to four P. M., the general public are invited to inspect the buildings.

NEW YORK.

A NEW ANTITOXIN PLANT.— The Pasteur Institute has just purchased thirty-five acres of land near Tuxedo Park on which will be established an experiment station. It will be stocked with cows, horses, sheep and goats and these will be used for the purpose of producing antitoxin for the prevention and treatment of diphtheria and cancer. The situation is very salubrious, and on the grounds there will be a a house in which some of the patients of the Institute will be treated. A new station is to be established on the Erie Railroad near by, which will be known as Pasteur.

A Death from Electricity.— James Dalton, an electric lineman, twenty-seven years of age, was instantly killed on September 17th, by coming in contact with a live wire while engaged in stringing a wire for the new trolley road of the Union Railway in the annexed district of the city. The current which passed through his body is said to have been of the strength of 550 volts, a considerably smaller voltage than in the case of the two workmen who survived a similar shock during the past few months at Rochester. A physician, Dr. Buckman, who was passing at the time, treated the man promptly, but all efforts at resuscitation proved fruitless.

Precautions against Cholera. — The quarantine authorities are taking every precaution against the introduction of cholera into the port of New York. The British steamship *Merionethshire*, which arrived from China and Japan on September 21st, owing to the prevalence of the disease in those countries, was detained at quarantine (although there had been no sickness of any kind on board during the voyage), and the crew temporarily removed to Hoffman Island while the vessel was thoroughly cleaned and disinfected.

Opening of the New University Buildings.— The Council of the University of the City of New York has fixed upon Saturday, October 19th, as the date for the formal opening of the new buildings on University Heights, overlooking the Harlem River. A chartered steamer will convey the faculty and students of the Medical Department from the dock in East 26th Street to the landing at University Heights, and a special train on the Manhattan elevated and New York and Northern Railroad will carry the students from the new Law Department, which has been erected on the site of the former University buildings on Washington Square. Governor Morton, Mayor Strong, the Chancellor of the Board of Regents of the State University at Albany, and the representatives of the Middle States and New England Associations of Universities and Colleges and of colleges in the West and South have been invited to be present on the occasion. At the last meeting of the Council the Chancellor of the University announced that gifts amounting to between $50,000 and $60,000 had been received during the summer.

Enlargement of the Naval Hospital.— The old United States Naval Hospital in Brooklyn, which was built in 1839, is now being enlarged and greatly improved. Congress, during its last session, at the urgent request of Surgeon-General Tryon, backed by the Secretary of the Navy, appropriated the sum of $60,000 for this purpose. The changes consist mainly in rehabilitating the interior of the old building and reconstructing most of the wards in accordance with modern requirements, and, finally, the construction of two new buildings. The principal of these will be of brick, three stories high. On the first floor will be the mess-hall of the convalescents and a private dining-room for the officers, on the second, the dispensary, and on the third, a completely equipped operating room and its adjuncts. This will have tiled floors, enamelled-iron furniture and fittings, operating tables of enamelled-iron and glass, glass cases for instruments and glass sinks and lavatories. In connection with the operating room there will be a "recovery" room, a sterilizing room and a surgeon's chamber and lavatory for use before and after operations.

Death of Dr. Nelson Isham. — Dr. Nelson Isham, said to have been the oldest living graduate of the Yale Medical School, died at his home in Little Falls, New York, on September 18th, at the age of ninety. He received his degree of M.D., in the year 1828. During the Civil War he was surgeon of the 97th Regiment, New York Volunteers.

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Miscellany.

MEDICAL MEN AND MEDICAL LEGISLATION.

The *Practitioner*, in a recent editorial, calls attention to the slender amount of influence upon legislation with respect to the public health which can be brought to bear by the representatives of the medical profession in Parliament at present. The editor somewhat pitifully remarks that, apart from politics, commercial influences are predominant in the House, and questions relating to public health are looked at through the distorting medium of trade interests, and calls attention to the fact that a much larger infusion of the medical element is required. The total number of medical members of the present Parliament is only ten, and of these seven are Irish and two Scotch, leaving only one for the English nation proper, a fact, which is, from the *Practitioner's* point of view, not creditable to the public spirit of the British profession, nor indicative of a proper interest on their part in medical legislation.

"Strictly speaking," says the *Practitioner*, "the medical profession has only two representatives — Sir Walter Foster and Dr. Robert Farquharson — both of them tried and trusty men; but what are they among so many? It is a duty which the profession owes to the State not less than to itself to take a more active part in public affairs; it is certain that it will never take the place which rightly belongs to it in the national life until it can make its influence felt as a factor in the political movement."

A general lack of interest on the part of the medical profession is as evidently and unfortunately present on this side of the water as in Great Britain. It is undoubtedly to be accounted for by several natural causes, among which may be mentioned the exacting nature of the profession, and the fact that the numerous demands of his professional work leave to the busy practitioner or the scientific investigator and teacher little or no time for work in medical legislation or the public health. Actual participation in the legislative work would be impossible for most active practitioners, on account of the time required in attending the long legislative sessions, which would mean suspension of practice during the whole period. Then there are the running for office, and the embroilment in political work, which are not only distasteful to most men of the type who succeed in medical practice, but actually incompatible with professional success. For reasons such as these, "the doctor in politics" on this side of the water at least, has usually come from the lower grades of professional life, and been a credit neither to the medical profession nor to the legislative body of which he has been a member.

A conspicuous example of the influence of the medical man in politics in retarding legislation for the benefit of the public health, was the attitude taken by Senator Gallinger, of New Hampshire, who had been a medical practitioner in that State, on the bill appropriating money for a bacteriological laboratory and disinfecting service and for the distribution of antitoxin in the District of Columbia. It will be remembered that his attitude, as noted in our issue of February 7, 1895, was against the passage of the bill, and that his influence was thrown squarely against this legislation for the public health rather than in favor of it.

There can be no doubt that there is need of the representation of the medical profession in our legislatures by the right class of men from the highest ranks of the profession. And inasmuch as active participation in legislative work is impossible for the rank and file of the profession, it becomes the duty and privilege of what may be called the medical leisure class to do this work; we mean those of independent means, who are not dependent upon the practice of their profession for their living.

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A CURIOUS ANOMALY.

At the Congress of Gynecology, Obstetrics, and Pediatrics recently held at Bordeaux,[1] Lannelongue reported the following case:

Some years ago a woman brought to him a male infant, aged three months, which passed water both through an umbilical appendix resembling a penis and by the natural organ which was in its proper place. The jet which came from the umbilical canal described a curve more than thirty centimetres in diameter. On examination, it was found that the apparent abnormal penis was an umbilical hernia caused by the persistence of the urachus. A urinary fistula had been produced on the separation of the umbilical cord. The child having died of broncho-pneumonia, Lannelongue made a post-mortem examination. The bladder was injected, and it was then seen that the viscus was prolonged by a channel as large as the forefinger, namely, the urachus, up to the umbilicus. This channel extended into the external appendix, where it opened by an oblique orifice resembling the meatus urinarius. The contractions of the bladder in micturition caused a stream in both directions, umbilical and urethral, hence the double jet of urine seen from time to time; this, however, was exceptional, as the musculo-elastic ring of the umbilicus fulfilled the function of a sphincter and prevented the escape of urine through that orifice.

Lannelongue says that this case once more shows the necessity of tying the umbilical cord only after having satisfied one's self that there is no hernia at the proximal end.

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[1] Semaine Médicale, August 21st.

Correspondence.

DR. ROSWELL PARK'S SPEECH BEFORE THE HARVARD MEDICAL ALUMNI.

Nahant, September 17, 1895.

Mr. Editor: — The report in the Journal of the 12th, brought to my notice for the first time the attack on the Catholic Church which Dr. Park had the bad taste to make the subject of his speech at the annual meeting of the alumni last June. I am not concerned to refute again the worn-out calumnies in which he indulged. I wish to discuss in an impersonal manner whether the worthy president of the alumni did his full duty on that occasion. Every man of good breeding knows that an anniversary celebration is an occasion on which all matters of controversy, above all religion and politics, should be avoided. What then is the presiding officer to do when a guest disregards the amenities common among gentlemen? The position, I admit, is a hard one. It is awkward to call him to order; but if he does not he allows many of his colleagues to be insulted who have chosen him for their leader and representative. They have a right to count on his protection; the more so that it was presumably the president who made a mistake in the matter of invitations.

I am glad to see that the *Harvard Graduate's Magazine* in its report of Dr. Park's speech has expunged the offensive portions.

Yours very truly,
Thomas Dwight, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, September 14, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,704,506	782	392	25.09	12.35	16.51	1.04	3.12
Chicago . . .	1,227,382	—	–	—	—	—	—	—
Philadelphia .	1,163,864	398	155	19.25	10.25	9.75	2.75	4.50
Brooklyn . .	1,100,000	454	231	25.30	7.04	18.04	.88	3.74
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	494,205	215	103	29.90	14.26	16.68	3.22	7.36
Baltimore . .	496,315	—	—	—	—	—	—	—
Cincinnati . .	333,970	124	49	10.53	11.34	8.06	—	2.43
Cleveland . .	325,000	—	—	—	—	—	—	—
Washington .	285,000	—	—	—	—	—	—	—
Pittsburg . .	272,000	80	—	41.25	2.50	27.50	11.25	1.25
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	36	7	13.90	18.46	13.90	—	—
Charleston . .	65,165	31	11	16.15	25.84	9.69	3.23	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	34	21	35.28	—	29.41	—	—
Fall River . .	88,020	47	31	38.34	8.52	34.08	—	—
Lowell . . .	84,359	41	23	29.28	7.32	26.88	2.44	—
Cambridge . .	81,519	29	12	41.40	10.35	27.60	—	10.32
Lynn	62,355	26	16	23.10	12.55	12.55	3.85	—
New Bedford .	55,254	15	7	40.00	6.66	20.00	6.66	—
Springfield . .	51,534	15	8	26.66	—	26.66	—	—
Lawrence . .	52,153	—	—	—	—	—	—	—
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	12	5	25.00	8.33	25.00	—	—
Brockton . .	33,157	9	4	22.22	—	22.22	—	—
Haverhill . .	30,185	14	8	21.42	7.14	14.28	—	—
Malden . . .	29,706	9	7	22.22	—	22.22	—	—
Chelsea . . .	31,295	15	6	33.33	—	20.00	—	13.33
Fitchburg . .	26,394	8	6	50.00	25.00	50.00	—	—
Newton . . .	27,622	12	6	33.33	8.33	8.33	—	25.00
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	9	3	—	—	—	—	—
Waltham . .	20,877	9	3	22.22	22.22	22.22	—	—
Quincy . . .	20,712	6	3		—	—	—	—
Pittsfield . .	20,447	3	2	66.66	—	33.33	—	—
Everett . . .	18,578	6	4	—	—	—	—	—
Northampton .	16,738	7	2	14.28	—	14.28	—	—
Newburyport .	14,554	6	1	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,654; under five years of age 1,201; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 670, consumption 271, acute lung diseases 177, diarrheal diseases 434, diphtheria and croup 93, typhoid fever 68, whooping-cough 34, scarlet fever 11, cerebro-spinal meningitis 8, erysipelas, malarial fever and measles 7 each.

From whooping-cough New York 19, Brooklyn 7, Philadelphia 6, Boston and Pittsburgh 1 each. From scarlet fever Philadelphia and Brooklyn 2 each, New York, Boston, Worcester, Cambridge, Lynn, New Bedford and Pittsfield 1 each. From cerebro-spinal meningitis New York 4, Lynn 2, Worcester and Fall River 1 each. From erysipelas New York 3, Philadelphia, Boston, New Bedford and Haverhill 1 each. From malarial fever New York and Washington 3 each, Charleston 1. From measles New York 4, Brooklyn 3.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530, for the week ending September 7th, the death-rate was 19.9. Deaths reported 4,050; acute diseases of the respiratory organs (London) 134, diarrhea 775, measles 75, whooping-cough 66, diphtheria 62, fever 49, scarlet fever 37, small-pox (London 5, Manchester and Oldham 1 each) 7.

The death-rates ranged from 11.1 in Plymouth to 40.5 in Sunderland: Birmingham 16.6, Bradford 25.8, Brighton 16.6, Croydon 13.2, Hull 35.6, Leicester 17.5, Liverpool 24.7, London 16.1, Manchester 27.2, Newcastle-on-Tyne 22.9, Nottingham 20.0, Portsmouth 22.1, Sheffield 26.3, Swansea 12.4.

METEOROLOGICAL RECORD,

For the week ending September 14th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 8	30.12	66	74	57	86	87	86	N.W.	E.	4	2	O.	C.	
M.. 6	30.18	70	82	57	61	84	72	S.W.	S.W.	3	8	C.	C.	
T..10	30.20	66	71	61	79	85	82	N.W.	S.	3	6	O.	C.	.42
W..11	29.93	74	82	66	82	87	84	W.	W.	10	12	O.	C.	.14
T..12	29.74	76	82	69	80	74	77	N.W.	W.	5	12	O.	C.	.21
F..13	29.90	61	66	56	53	48	50	N.	N.W.	14	14	O.	C.	
S...14	30.14	52	57	47	50	62	56	N.W.	N.W.	14	11	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 14, 1895, TO SEPTEMBER 20, 1895.

MAJOR CLARENCE EWEN, surgeon, now on sick-leave of absence is relieved from further duty at Fort Walla Walla, Washington, and ordered to Fort Bliss, Texas, for duty, relieving MAJOR BLAIR D. TAYLOR, surgeon.

MAJOR TAYLOR, on being thus relieved, is ordered to Fort McPherson, Georgia, for duty at that post.

The following named officers are detailed to represent the Medical Department of the Army as delegates at the annual meeting of the American Public Health Association, to be held at Denver, Col., October 1 to 4, 1895: LIEUT.-COL. ALFRED A. WOODHULL, deputy surgeon-general; MAJOR CALVIN DEWITT, surgeon: MAJOR HENRY S. TURRILL, surgeon.

Leave of absence for one month, to take effect on or about October 6, 1895, is granted FIRST-LIEUT. PAUL F. STRAUB, assistant surgeon, San Carlos, Arizona.

MAJOR HENRY M. CRONKHITE, surgeon, will report in person to the president of the Army Retiring Board, to convene at Chicago, Ill., on October 8, 1895, at such time as he may designate, for examination for retirement.

Leave of absence for one month, from the date of his relief from duty at Fort Logan, Colorado, is granted CAPTAIN LOUIS A. LAGARDE, assistant surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 21, 1895.

M. S. GUEST, assistant surgeon, detached from the "Minnesota" and ordered to the "Vermont."

R. C. PERSONS, surgeon, detached from the "Minnesota," ordered home and placed on waiting orders.

C. M. DEVALIN, assistant surgeon, detached from the "Vermont," ordered home and granted six months' sick leave.

C. P. BAGG, assistant surgeon, ordered to the "Vermont."

D. N. BERTOLETTE, surgeon, ordered home and placed on waiting orders when the "Atlanta" goes out of commission.

P. H. BRYANT, passed assistant surgeon, detached from the "Baltimore" and ordered to duty on the "Petrel."

W. F. ARNOLD, passed assistant surgeon, detached from the "Petrel" and ordered to special duty in investigating the plague in China and cholera in Japan.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING SEPTEMBER 15, 1895.

BANKS, C. E., passed assistant surgeon. To proceed from Washington, D. C., to Vineyard Haven, Mass., for temporary duty. September 11, 1895.

GLENNAN, A. H., passed assistant surgeon. Granted leave of absence for five days. September 3, 1895.

WERTENBAKER, C. P., passed assistant surgeon. Granted leave of absence for three days. September 3, 1895.

HOUGHTON, E. R., passed assistant surgeon. Granted leave of absence for twenty-three days. September 12, 1895.

COFER, L. E., assistant surgeon. Granted leave of absence for seven days. September 3, 1895.

SOCIETY NOTICE.

MASSACHUSETTS MEDICO-LEGAL SOCIETY. — The autumn meeting of the Society will be held at 19 Boylston Place, Boston, at 1 P. M., October 2, 1895.

The "Trial of Angus Gilbert for Murder" will be the subject for discussion, and papers relating to the affair will be presented by Drs. Draper, Whitney and Jelly.

F. W. DRAPER, M.D., *Recording Secretary.*

JOHN COLLINS WARREN, LL.D.

At a recent meeting of the Trustees of Jefferson Medical College, Philadelphia, the honorary degree of LL.D. was conferred on Dr. John Collins Warren, Professor of Surgery in Harvard University.

RECENT DEATH.

JOSHUA GREEN WILBUR, of Brooklyn, N. Y., died June 25, 1895. He was born in Saugus, Mass., September 25, 1825, was engaged in the drug business in Boston for many years, studied medicine in the Harvard Medical School and took his degree in 1862. He was appointed acting assistant surgeon, U. S. A., in June, 1862, and served for some time at the Patterson Park Hospital in Baltimore; commissioned assistant surgeon 18th Massachusetts Volunteers in January, 1863, serving in the Army of the Potomac at Chancellorsville, Gettysburg, etc. He resigned on account of disability October 31st, and later, did good service as acting assistant surgeon at Baltimore and Readville. Dr. Wilbur removed to Brooklyn, N. Y., where he engaged in practice; he was principally occupied however as examiner for the large life insurance companies in New York. He was a member of the Historical Society of Brooklyn, the New England Society and the Loyal Legion.

BOOKS AND PAMPHLETS RECEIVED.

Report on the Stamford Typhoid Fever Epidemic. By Prof. Herbert E. Smith.

The Theory and Practice of Counter-Irritation. By H. Cameron Gillies, M.D. London: Macmillan & Co. 1895.

Physiological Factors in the Neuroses of Childhood. By B. K. Rachford, M.D., Professor of Physiology and Clinician to Children's Clinic, Medical College of Ohio. Cincinnati: Robert Clark & Co. 1895.

Chicago's Need of Special Hospitals for Consumptives. Malignant Endocarditis with Vegetations in the Right Auricle and a Perforation of the Inter-Auricular Septum; Mitral and Aortic Regurgitation. By John A. Robison, A.M., M.D. Reprints. 1895.

Disorders of the Male Sexual Organs. By Eugene Fuller, M.D., New York, Member of the New York County Medical Society, Academy of Medicine, American Association of Genito-Urinary Surgeons; Instructor in Genito-Urinary and Venereal Diseases in New York Post-Graduate Medical School, etc. Philadelphia: Lea Brothers & Co. 1895.

Clinical Lectures on Diseases of the Nervous System delivered at the National Hospital for the Paralyzed and Epileptic, London. By W. R. Gowers, M.D., F.R.S., Physician to the Hospital; Consulting Physician to the University College Hospital; formerly Professor of Clinical Medicine in University College. Philadelphia: P. Blakiston, Son & Co. 1895.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum............
Albany Medical College............
Anheuser-Busch Brewing Association........
Antikamnia Chemical Company...Antikamnia
Armour & Co............The Armour Laboratory
Ayer's Hygienic Coffee............
Baker, L. W., M.D.............Riverview
Baker, Dr. W. H.............Caro
Battle & Co.............Bromidia
Bellevue Hosp. Med. Col..... Sessions of '94-95
B. H. R. Distilling Co............
Borine Chemical Co.............11,
Bowdoin College............Medical Department
Bowker, Dr. E. M.............Vaccine Virus
Boylston Medical Prize Questions............
Breitenbach Co., M. J............Pepto-Mangan
Channing, Dr. Walter............
Chauncy Hall School............
Cocke, Dr. James R............
Codman & Shurtleff......Surgical Instruments
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Fisk & Arnold.............Artificial Limbs
Flood, Dr. Everett............
For Sale............
Fougera, E. & Co.............Imp'g Pharmacists 8,
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Goode, T. F.............Buffalo Lithia Water
Graham, Dr. Douglas......Treatise on Massage
Greene, Dr. E. M.........Examinations of Sputa
Harvard University........Dental Department
Harvard University.......Medical Department
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McElroy, F. J.............Glass Syringes
Medical Practices, etc............
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Seeley, I. B. & Co.......... .Hard Rubber Trusses
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Waterman, Dr. Thomas..Animal Vaccine Virus
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2. Dissection Courses	Dr. Dexter	Medical School	After Nov. 1	20.
3. Special Anatomical Instruction	Dr. Dwight	Medical School	Special*	Special.*
† 4. Histology and Microscopy	Dr. Minot	Medical School	Special*	30.
† 5. Elementary Human Embryology	Dr. Minot	Medical School	Special*	25.
† 6. Advanced Embryology	Dr. Minot	Medical School	Oct.—May	75-125
† 7. Physiology	Dr. Bowditch	Medical School	Special*	Special.*
† 8. Medical Chemistry	Dr. Wood	Medical School	Special*	35.
9. Clinical Microscopy	Dr. Whitney	Massachusetts General Hospital	Special*	Special.*
†10. Surgical Pathology	Dr. Mallory	Medical School	Apr., May	20.
†11. Pathology of the Infectious Diseases.	Dr. Wright	Medical School	Nov., Dec.	25.
†12. Pathological Anatomy and Histology of the Nervous System	Dr. Taylor	Medical School	Special*	15.
13. Clinical Medicine	Dr. Ernst	Massachusetts General Hospital	Oct.	15.
†14. Clinical Medicine	Dr. Knight	Boston City Hospital	Oct., Nov.	10.
†15. Clinical Medicine	Dr. Mason	Boston City Hospital	Nov., Dec., Jan.	20.
‡16. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Oct.	20.
‡17. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Dec.	20.
‡18. Abdominal Surgery	Dr. Conant	St. Elizabeth's Hospital	Oct., Nov.	25.
19. Clinical, Operative, Genito-urinary, Pathological and Minor Surgery	Drs. Monks and Thorndike	Boston City Hospital	Oct.—Dec.	25.
20. Clinical, Operative, and Minor Surgery	Drs. Burrell, Lovett, and Munro	Boston City Hospital	Dec.—Apr.	25.
21. Operative Surgery	Dr. C. B. Porter	Medical School	Special*	25.
22. Clinical Surgery	Dr. M. H. Richardson	Massachusetts General Hospital	Feb., March, Apr., May	25.
‡23. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Oct., Nov., Dec.	25.
‡24. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Apr., May, June	25.
25. Minor Surgery	Dr. Scudder	Massachusetts General Hospital	Feb., ‡Apr., ‡May	25.
26. Clinical Surgery	Dr. Gay	Boston City Hospital	Apr., May	15.
27. Clinical Surgery	Dr. Homans	Massachusetts General Hospital	March, Apr.	20.
†28. Orthopedic Surgery	Dr. Bradford	Children's Hospital	Apr.	15.
29. Clinical Obsterics	Dr. W. L. Richardson	Boston Lying-in Hospital	Nov., Dec., April, May	20.
30. Clinical Obstetrics	Dr. C. M. Green	Boston Lying-in Hospital	Jan., Feb., March	20.
31. Practical Obstetrics	Dr. Reynolds, Townsend, and Haven	Boston Lying-in Hospital	Special*	20.
32. Operative Obstetrics	Dr. C. M. Green	Medical School	Special*	25.
33. Diseases of the Skin	Dr. White	Massachusetts General Hospital	Oct.—June	25.
34. Otology	Dr. Blake	Infirmary	Dec., Jan., Apr., May	25.
35. Otology	Dr. Bryant	Infirmary	Dec., Jan	25.
36. Ophthalmology	Dr. Standish	Infirmary	Dec., Jan.	Special.*
37. Ophthalmology	Dr. Cheney	Massachusetts General Hospital	March, Apr.	Special.*
38. Gynecology	Dr. Swift	Free Hospital for Women	Oct.	25.
39. Gynecology	Dr. Swift	Free Hospital for Women	Dec.	25.
40. Gynecology	Dr. Davenport	Free Hospital for Women	Jan.	25.
41. Gynecology	Dr. Davenport	Free Hospital for Women	March	25.
42. Gynecology	Dr. Haven	Boston Dispensary	Nov.	25.
43. Gynecology	Dr. Swift	Boston Dispensary	Jan., Feb.	25.
44. Gynecology	Dr. C. M. Green	Boston City Hospital	Oct., Nov., Dec.	25.
45. Operative Gynecology	Dr. Davenport	Medical School	Special*	25.
46. Diseases of the Nose and Throat	Dr. De Blois	Boston City Hospital	Feb., March	Special.*
47. Diseases of the Nose and Throat	Dr. Farlow	Boston Dispensary	Oct.—Jan.	Special.*
48. Diseases of the Nose and Throat	Dr. Farlow	Boston City Hospital	Apr., May.	Special.*
49. Diseases of the Nose and Throat	Dr. Coolidge	Massachusetts General Hospital	Feb., March	Special.*
50. Mental Diseases	Dr. Cowles	McLean Hospital	Special*	10.
51. Bacteriology	Dr. Ernst	Medical School	Special*	25.
52. Diseases of Children	Dr. Wentworth	Children's Hospital	Oct., Nov.	20.
53. Diseases of Children	Dr. Wentworth	Children's Hospital	Dec., Jan.	20.
54. Diseases of Children	Dr. Buckingham	Children's Hospital	Feb., March	20.
55. Diseases of Children	Dr. Buckingham	Children's Hospital	Apr., May	20.
56. Neurology	Dr. Knapp	Boston City Hospital	Feb., March	20.
57. Neurology	Dr. Knapp	Boston City Hospital	Apr., May	20.
58. Neurology	Dr. Walton	Massachusetts General Hospital	Nov.	20.
59. Legal Medicine	Dr. Draper	Boston City Hospital	Oct.—June	25.
60. Hygiene	Dr. Harrington	Medical School	Special*	25.

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PAGE

ORIGINAL ARTICLES.

Teachings of the Old Surgeons. *J. G. Mumford, M.D.*, Boston, Mass 333

The Gonococcus. *By Henry Dexter Chadwick, M.D.*, Surgical Interne, Boston City Hospital.. 337

Recurrent Oculo-Motor Palsy with a Case. *By G. E. De Schweinitz, M.D.*, Philadelphia.................. 341

The Condition of the Nose in Phthisical Patients. *By J. Payson Clark, M.D.*, Physician for Diseases of the Throat, Massachusetts General Hospital.... 342

MEDICAL PROGRESS.

Recent Progress in Surgery. *By H. L. Burrell, M.D.*, and *H. W. Cushing, M.D.*.......... 344

Erysipelas-Serum for the Treatment of Cancer.—Cause of Death following Burns.—Local Traumatic Emphysema of the Skin after Laparotomy.—Experiments on the Gall-Ducts and the Liver.—The Radical Cure for Hernia.—Ventro-Fixation for Complete Rectal Prolapse.—*Diagnostic* Ureterotomy.—Saline Infusion for Suppression of Urine.—The Technique of Amputating Limbs.—Hoffa Operation for Congenital Dislocation of the Hip.—Operative Treatment for Fracture of the Patella.—Disinfection of Knives.—Cardiac Sutures.

PAGE

REPORTS OF SOCIETIES.

American Neurological Association. Twenty-First Annual Meeting, Boston, June 5, 6 and 7, 1895. (Continued.)................. 346

First Day (continued).—Two Cases of "Railway Spine," with Autopsy.—Lantern Exhibition of Photo-Micrographs of Nervous Histology; Golgi Stains.—Lantern Exhibition of the Medulla Oblongata of a Chimpanzee, with other Specimens.—The Brain of a Chimpanzee.—The Part of Inhibition in the Physiology of Respiration.—The Pulse in Insanity, Original Study of Cases.—The Localization of Lesions in the Pons.

RECENT LITERATURE.

Lectures on Surgery. By David W. Cheever, A.B., M.D. Boston: Damrell & Upham. 1894....... 349

EDITORIALS.

Professor Louis Pasteur.. 350

The Dangers of Murphy's Button.......... 351

Medical Notes.................. 351

The Cholera in Russia.—Dr. Lauder Brunton.—Inebriety and Insanity.—The Tuberculin Test for Bovine Tuberculosis.—Subscriptions to the "Index Medicus."—Duration of Life after the Development of Albuminuric Retinitis.—Retirement of Dr. Gihon.—Enthusiasm Carried too Far.—Extraordinary Contents of a Hernial Sac.

PAGE

New England.

Acute Infectious Diseases in Boston.—A New Pathological Building.—The New McLean Buildings at Waverley.

New York.

The Medical Society of the County of New York.—Quarantine of the New York Juvenile Asylum.—Glanders in a Livery Stable.—The Law Enforced.—The Tetanus Antitoxin.—An One Hundred and Third Birthday Celebrated.—Death of Dr. Edward W. Burnette.

CORRESPONDENCE.

The Rush Monument Fund. *George H. Rohé*, Secretary and Treasurer, Baltimore............ 355

MISCELLANY.

The Inspection of Milch Cows in Rome.... 354

A Substantiation of the Water-Borne Theory of Cholera.................. 354

A New Application of Homeopathy......... 355

Record of Mortality, September 21, 1895... 355

Meteorological Record, September 21, 1895. 355

Army and Navy Services.................. 356

Recent Deaths.................. 356

Books and Pamphlets Received............ 356

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FOR INDEX TO ADVERTISEMENTS

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See Advertisement of

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PAGE 18.

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See pages 16, 17, 18 and 19.

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Original Articles.

TEACHINGS OF THE OLD SURGEONS.

BY J. G. MUMFORD, M.D., BOSTON, MASS.

On the Continent and in England many men read the old masters, and in our own country their writings are well known to not a few.

Quite recently a new impulse has been given to such studies by the publication in Paris of Nicaine's editions of the works of Guy de Chauliac and Henri de Mondeville.

The latter, born in the thirteenth century, composed his surgery about 1310. He was surgeon to Philip the Fair and Louis X. He was exposed to the obliquy so commonly poured out on reformers in those days. His great heresy consisted in his adherence to the familiar teaching *vis medicatrix naturæ.* His work for 600 years was disregarded.

De Chauliac died an old man in 1365. His work, composed in his later years, remained for two centuries the great text-book of surgery.

Perhaps, to us now, the most interesting thing about these two teachers, is that, more than a hundred years before Paré, they spoke familiarly of the ligature of arteries.

The thought of the rational studies of those two men, working on lines centuries in advance of their contemporaries, furnished me with a text for this article.

One seldom goes to a large general medical meeting, attends a medical dinner or listens to a formal professional speech, without being told, by the orator, of the wonderful recent advances in surgical science, of the ignorance of our fathers, of the brilliancy of ourselves; so that one would almost think, as many do think, that surgery is a modern science.

Mr. W. Watson Cheyne, in his chapter on "The History of Antiseptic Surgery," says that all the old surgeons were governed by one thought — the desire to *make* the wound heal, as they said; and that the feeling was universal that wounds left to themselves went to the bad. That is not true, as I read the old writers. It is the very error which the best of them were constantly preaching against. To be sure, their voices may have been lifted in the wilderness, and doubtless the practice of the times was often bad among the rank and file; but this is true of all ages. "Give nature a chance," "Leave more to nature" was frequently said. Paul d'Egineta, even in the seventh century, taught it, and Rogerius in the thirteenth. So did Bouve about the same time, and later De Vigo and Paracelsus. That most entertaining writer, Le Dran, in the second quarter of the last century, taught his Parisian students to assist nature and not to thwart her; and Napoleon's great surgeon, Baron Larrey, taught to close a simple wound and leave it to nature for a first intention, as even the savages knew that.

We do better now, to be sure, than that. We guard nature without interfering with her, at least, that is our effort; but one is sometimes inclined to think that our asepsis accomplished, we care for little else. Surgical rest, comfort and support are almost equally important; discomfort and pain are still serious complications. They used to be danger signals. They must be thought so still.

Not only did Larrey teach local but general support, the sustaining of the general strength, a stimulating and nourishing diet. We are apt to think that those surgeons confined themselves to bleeding and purging. So far was Larrey from this that he was fertile in devices for forced feeding. The stomach-tube was in common use; and when that would not serve, he advised a soft-rubber catheter passed through the nose and well down into the esophagus. He remarks that this method is especially valuable with hysterical patients and those whose fauces are paralyzed. His contemporary, Benjamin Bell, in 1804, said that with patients exhausted by suppuration a full diet, supplemented by an abundance of alcohol, was absolutely needful. The danger of superficiality was keenly appreciated by such men; and Bell says: "Accordingly, in different hospitals we daily meet with good operators, but we do not often find surgeons possessed of that knowledge in the prognosis of chirurgical diseases which might be expected, that attention being seldom bestowed which is necessary to attain it." Indeed, Bell thought that his success was more largely due to his prescribing wine, food and Peruvian bark than to his operative skill. This use of wine and spirits with alcoholic subjects was especially urged by Sir Astley Cooper, who may almost be considered a modern. He said: "When a drunkard is injured, don't cut off his rum too soon; it keeps up his strength and acts as an antidote to the infective poison of the wound." Indeed, Sir Astley, in making his prognosis as regards sepsis, laid more stress on the patient's general condition than do we ordinarily. He most emphatically recognized that, whatever the immediate cause might be, a patient in wretched general condition offered a better field for a rapid septic infection, whether from traumatism or any other cause, than did a person in robust health. It is interesting that his exception to this general rule is in the case of an "acute peritonitis, so severe and commonly fatal in vigorous young men." This parallels our own experience with rapidly fatal appendicitis.

The grand principle in the cure of disease, says he, is that all the secretions must be restored. "If the bowels, the kidneys and the sweat-glands are working, the poison will be eliminated and the patient recover." Though we seek our object by other methods and for better understood cause, this maxim is the same with us to-day.

Emotional causes of disease were greatly considered one hundred years ago. Keen's recent suggestive article on the "Operation, *per se*" recalls many of the experiences of Sir Astley, who had no doubt that general conditions and mental impressions entered more largely into surgical therapeutics than was or is believed.

Even for those in health he preached a carefully regulated life, and says that in his own case he always employed temperance, early rising and cold morning baths, for the cold bath is especially valuable in an increased irritability of the nervous system; and Benjamin Bell says that in persons afflicted with chilblains or tuberculous tumors "the only good is from cold bathing and tonics."

"There are few satisfactions greater than being satisfied with one's personal appearance," says Sir Astley, and tells of "a drawing-master with bow shins; a deformity which he considered so grievous as to seriously interfere with his vocation. He applied to many surgeons to relieve him, but without success. Finally, a heartless quack consented to operate. He laid open the calf and scraped away the outer side of the tibia until there was little left but the inner shell. The operation was done successively on either shin, and the leg then straightened by an outside splint. The patient was rendered a wretched cripple for life, and the operator was nearly hounded out of town; but," says Sir Astley, "extraordinary as it may seem, the drawing-master was perfectly satisfied with his new appearance and returned complacently to his occupation."

Hygiene and proper surroundings for surgery were early recognized as important; and the comparison between hospital surgery and surgery done in the country was as commonly made in the old days as it is with us. We are all familiar with the assertion of our country brother that he never sees puerperal fever and that his operation wounds usually heal by first intention. These statements doubtless are in a large measure perfectly true, and the reason for this state of affairs is sufficiently obvious. We in the city hospitals are constantly at war with the bacillus. Our predecessors very often abandoned the field and carried their operations into the country.

The explanation of septic fever given by old writers is interesting; and some of them came exasperatingly near the truth. Writing at the end of the last century, one says: "Septic fevers are due to the sympathetic action of the nervous system. When a part is injured, nature contends for a cure by stopping the functions of all the uninjured organs and thus, turning aside their blood-supply to the injured part, setting up inflammation and so attempting cure. Sometimes, alas, she is too hasty."

Sir Astley Cooper constantly invoked the action of the sympathetic nervous system to explain various phenomena, stating, for instance, that slight blows on the stomach causing death were due to irritation of the semilunar ganglion, and that urethral and bladder operations were dangerous from the same cause. He says elsewhere, "Do not do lithotomy on a child under two years of age, if avoidable, or you will see convulsions and death."

In our own day, perhaps, we are not altogether free from some needless fears of that same nervous system, or of bogies cloaked in other names and called *diatheses;* but whether those seniors of ours attributed acute general infections to the electric action of the nerves or not, they were prompt to recognize the danger and to use fairly rational means in combating it.

Their recognition of the causes of nerve storms and neuralgias were frequently inaccurate, of course; but it is interesting to see them using as nerve tonics our modern favorites, arsenic, iron and quinine.

The study of the development of wound dressings is a very fascinating one, and the astonishing guesses at both antisepsis and asepsis fill surgical literature. The fact that they were guesses and not rational deductions alone, lost them their proper place, though certain varieties of deodorizers and mild antiseptic oils and balsams have been favorites from time immemorial. The old Hebrew writers and the mediæval monks speak of sweet-smelling spices, and we are told that the Good Samaritan dressed the wounds of the stranger by pouring in oil and wine. Doubtless, Rebecca so brought the wounded Ivanhoe back to health, to judge from Sir Walter's somewhat florid description of that episode.

The routine practice of closing and dressing wounds, with the object of attaining a primary union, is much more modern, however; and the development of that practice came slowly. Attempts were made, indeed, as early as the end of the fifteenth century, when De Vigo taught to close fresh incised wounds and drain with lint.

Another of our old friends, Philippe Auréole Théophraste Paracelse Bombast, who was born in 1493, a date easily remembered in connection with a certain affair at Chicago, two years ago, used silver sutures and lead washes. In our own day we find Sampson Gamgee a strong advocate of these same silver sutures and for the same reason, that they are unirritating and less likely to cause suppuration.

Paracelsus aimed only at aiding nature, and sought a medicament that would prevent corruption. After him many surgeons, Ambroise Paré, Delacroix, Fallopius and others used antiseptic washes, mostly alcohols.

Magatus and Paré, in the sixteenth century, insisted upon infrequent dressings, anticipating the common practice of to-day. Here, Watson Cheyne, in 1882, makes the somewhat surprising assertion, that "these infrequent dressings, owing to the fear of bad effects from the contact of air with the wound, were, as we now know, the outcome of a wrong theory," and the error of such teaching eventually did great harm to Magatus's many good points.

Richard Wiseman and Sir John Coldbatch were most judicious among the English surgeons. The latter appears to have had some remarkable results from the use of a process of his own, which is not given, but which seems to have closely resembled Listerian methods. He put a powder into water, and with the mixture syringed out the wounds, covering them with pads wrung out of the same preparation. The method was evidently empirical, for he remarks casually that if water was not convenient he would take urine. Unfortunately, Coldbatch's method seems to have been completely lost; it is suggested that his powder was probably boric or salicylic acid.

After all, the balsams always retained their favor. In 1730 Le Dran, in seeking primary union, covered the wound with a linen rag dipped in some glutinous balsam, Canadian or Peruvian, to prevent putrefaction. He adds the elegant and cosmetic suggestion, that in dressing the perineum one should use oil of roses and that the deeper parts should be steeped in brandy. Later, the wound should be dressed simply with dry lint.

Baron Larrey used balsams, wine and brandy; and washed the wounds with a warm salt solution. When there were extensive suppuration and sloughing, applications of chlorinated soda, known as *Eau de Labarraque.* His favorite application was the well-known storax, which under its modified form of styrone is now so popular with many surgeons. Such preparations were always called antiseptic substances, and Benjamin Bell especially urges their use in gangrenes and ulcers.

The possibility of a second intention, a union between clean granulating surfaces after a thorough antiseptic bath was often taught by the same writer, who says: "It is a mistake to suppose that wounds will not adhere when in a state of bland purulency.

I have repeatedly treated with sutures sores of from one to four weeks' standing, and for such intentions a dry lint dressing is all-sufficient." Moreover, for suppurating inflammations we must use hot poultices, but for granulating wounds a bland ointment is all-sufficient; and when the pain, inflammation and primary fever are over in open wounds, poultices should no longer be used. Then employ lint, backed with a tow bolster to keep up firm and even compression. If poultices are needed still, warm immersions in salt water or fresh milk are most useful to supplement them. Dress simple wounds seldom and with mild aperients.

Sir Astley Cooper had an interesting faculty for seizing upon drugs destined to become famous. Among others he mentions bichloride of mercury, which he commonly used as a wash for ulcers and sinuses — an excellent application, on account of its cleansing and stimulating properties.

The practice of getting wounds clean was an early one in surgical science: innumerable devices were tried — washes, ointments, stimulants and caustics. The more modern idea of irrigation did not become well established until the present century. Copious libations of cool water were taught first by Percy and Lombard in 1785, and had long been the common practice among English surgeons at the beginning of the Listerian era. How far the idea that wounds must be abundantly flushed has affected our own practice we know but too well. For many surgeons even now feel that their operation is incomplete until the clean, fresh wound is drowned in floods of corrosive sublimate or carbolic acid.

In the treatment of deep suppurations by drainage we have improved but little on the best practice of one hundred years ago. Benjamin Bell always used hollow drainage-tubes in deep wounds and sinuses when pus was to be evacuated; "not tents," he adds, "which do not absorb and serve to block the discharge." He would doubtless have objected, on the same ground, to the plugging of suppurating sinuses with iodoform gauze, a common misuse of a valuable agent to-day. Le Dran says: "The only cure for empyema is to operate and drain with a catheter. If the amount is great, don't drain it all off at once on account of faintness and suspended dilatation of the lungs."

The agency of the air in causing suppuration was an endless subject of discussion even down to our own time, and many experiments were undertaken to prove or disprove its harmfulness. Sir Astley Cooper convinced himself that air did no harm from the experience of an ingenious and heroic butcher. This person was drawn to serve in the militia. Hearing that a hernia disqualified a man for service, the butcher inserted a long tin tube beneath the skin of his scrotum, and having blown it up, presented himself to the examining surgeon with the statement that he had always been ruptured. After a cursory examination he was discharged. The false hernia disappeared after a few days, and the man was never the worse for his trick.

Though Sir Astley came largely to disregard the entrance of air into wounds, most of his contempories still feared it. For many years, even back to the time of Paré, some surgeons had taught that it was the miasms in the air and not the air itself which did harm; yet one hundred years ago the fear of air as air was rife among men, and they went about seeking how they might exclude it. The use of the spray in our own days shows that this fear died hard. Benjamin Bell, John Bell, Hugh Munro, Alexander Munro, James Latta, Abernethy, Percival Pott, John Hunter and many other worthies hated and dreaded this same air for one cause or another. Some of them, as Guyot, put the wounded members in hot-air boxes and kept them there. Here was a sort of mild asepsis, not fifty years ago. Others, like Dupuytren, operated subcutaneously as much as possible and so got some unexpectedly good results. The vast majority, therefore, were convinced that there was something deleterious in air, and even after operating still attempted its exclusion. They painted wounds with tincture of iodine in 1830, covered them with collodion in 1848 — this first used in America. They would always pour in their oil or wine or water. It is a wonder to me they did not operate *in vacuo*; indeed, a vacuum-box dressing was tried in Paris, but availed nothing.

All this sounds something like a blind groping in the dark, but there were other cases in which sound rules were laid down and followed. When an evil was accepted, when inflammation and pus did appear, the treatment was often most logical.

When wounds were sewed up and strapped, drainage was provided; for Le Dran used strapping, constantly leaving loose spaces where drainage was easy. But, he insisted: "If you do want a first intention, which is most common, an assistant must absolutely approximate the edges; don't pucker or invert, else you will have sloughing and non-adhesion. If you sew up, tie your knots at the least dependent part, so they will not imbibe blood and harden; if you choose, oil them." Not a bad thought for delicate cosmetic work on the face and neck.

So the methods of threading needles, passing and tying sutures, and the thousand and one minutiæ which are now left for the assistant, were then thought not unworthy of the surgeon, and essentials in his success. The use of double-headed sutures was popular two hundred years ago, for use in all deep wounds as well as in the abdomen. The flaps were most beautifully and accurately approximated and in the very fastenings of the swathe the pins were so arranged as not to incommode or press upon the line of the scar. In sewing up these deep wounds Le Dran tells his pupils that the lower angle should always be left open so that the wholesome but superabundant juices of the wound may exude and pressure and pain be avoided even should there be no formation of pus. Their drainage is to be secured by passing in a number of strands of ligature silk.

Similar use of capillary drainage — I think I am not mistaken in having heard it claimed as a modern invention — such use of capillary drainage is strongly urged also by Benjamin Bell, who drained even liver abscesses, after operation, by long, loose strands of lint wicking. And three hundred years earlier De Vigo had closed wounds and drained with wicks.

Most of all did the older surgeons pay attention to open wounds, ulcers and burns, which were granulating. For the immediate ease of the pain from a burn they would commonly plunge the part into salt water or a soda solution. We, to-day, know the immense comfort of a warm soda bath for the badly burned.

We find our modern successful use of strapping for leg ulcers advocated by Sir Astley Cooper, to flatten the granulations and support the sore. He was wont to use, also, sheet lead and tin dressings in such cases. When the offending veins were especially full he would tap them once or twice weekly and apply a corrosive-sublimate wash, a hundred years ago. Then the whole leg was to be carefully put up in a supporting flannel bandage, changed daily.

I cannot see that we have much to teach Sir Astley here, and I dare say he might have taught us a good deal.

Very favorite preparations in the last century were those of Goulard. They contained lead, and were used, in the form of ointments, cerates and lotions, as applications to sluggishly granulating wounds.

Another careful suggestion, showing thought for the preservation of function, was this: that in a deep wound, say on the front of the thigh, in which the muscles were divided obliquely, the deep stiches should be passed so as to run parallel with the muscle fibres and not obliquely, as would be natural in sewing up an incised wound. Le Dran claims that by so doing the power of the limb will be unimpaired. Stitches so taken, when there was the slightest strain, were always to be supported by plaster, which should reach to the neighboring joints on either side. Another device for securing absolute approximation — a device so commonly neglected to-day — was the passing of sutures with a curved needle entirely beneath the depth of the wound. In many such cases, especially when incised wounds were received on the battle-field, one reads that first intentions were the rule, and that the stitches could be removed on the sixth day. To attain this it was thought most essential to have a perfectly dry wound before sewing up; so after securing the vessels by torsion or tying with fine silk, a pledget of dry lint was pressed for some minutes upon the oozing surface. It was well understood that a dry, absorbent material was the best hemostatic. This was one hundred and fifty years ago. We have within five years rediscovered the advantages of what it pleases us to call operating by the dry method.

Though sutures were extensively used, their employment was always attended by a very wholesome fear of stitch abscesses; and one finds the advice constantly given, "Never use sutures when a bandage will do." The pressure of the stitches was thought to be the cause of danger. Plaster and strapping were also very extensively employed where we should never think of their use. Even when stitches were used, however, the impending inflammation was averted frequently by the use of massage, which, sometimes supplemented by opiates and leaching, would quiet the wound without the necessity of removing the stitches.

The idea of the presence of a stitch not being in itself an irritant was confirmed in the minds of men by the safe use of fine buried silk ligatures for vessels, in many cases. Sometimes they sought an absorbable material; and one of them in Napoleon's time tells of the use of buried catgut, which was not specially successful. It became absorbed, but gave rise to an obstinate suppuration. Sir Astley Cooper tried it also in 1820. Many years later, when American surgeons, in our Civil War, made use of animal ligatures, the English journals called it that barbarous practice of burying dead animal matter in live human wounds.

Sampson Gamgee, the best modern exponent of non-intervention in wound treatment, and of absolute rest by posture and immobilization, admits that he learned his lesson from the ancients. Le Dran kept his culture media sterile by always placing the limb so as to relax the muscles and then immobilizing. "Otherwise," said he, "the nutrient juices, not being at rest, will be converted into pus." The patient was never to help himself, but could be moved freely about if no pain were so caused, and even after abdominal section this was allowed if the abdomen were restrained by a firm swathe.

For similar reasons wounds were to be left undisturbed as long as possible. I think Baron Larrey teaches this as forcefully and convincingly as any writer of any age. His text is constantly: "Absolute rest is essential to encourage nature; therefore, leave the first dressing on as long as possible. There must also be an uniform and careful pressure over wounds." And of all bandages for almost all conditions, the best were said to be elastic flannel rollers, as they not only compressed the wound but firmly controlled the muscles.

Not only for wounds of the soft parts were these principles to hold good; but in cases of fractures, amputations, inflammations and ulcers, rest, elevation and elastic compression were to be the first essentials, "for nature herself enjoins rest; the muscles won't act over an inflamed part." And in the face of the prevalent dread of joint complications Sir Astley Cooper says, "Wounded joints often heal readily if they are immediately sealed up, dressed with alcohol and absolutely immobilized." Long before that, of all writers to insist on the value of physiological rest, Ambroise Paré preached the most fervently and was the least regarded.

Beyond this the need of clean wounds was instinctively felt, if not logically reasoned out, by a host of thoughtful teachers. Le Dran says: "The region about must be thoroughly cleaned lest inflammation be set up and pus form; therefore, the entire field of operation should be thoroughly shaved and scrubbed, then clean up the wound, and wash with warm wine."

Every feeble ray of light in a dark past has its charm to the student. Old theories of the value of inflammation come near being illuminations at times. Sir Astley Cooper seems almost to have foreseen the advent of our phagocytes when he says:

"Local injuries are repaired by inflammation, and we know that repair has begun through inflammation by the increasing sensitiveness of the injured part.

"Especially is this so in bones, which when fractured unite by the action of an inflammatory process; the action must be rapid in order that no trouble ensue, and even in compound fractures, so soon as adhesions are formed, the danger is over and healing progresses as rapidly as in simple fractures. This is true, too, of Cæsarean section. If the operation be done boldly and rapidly and adhesions form in the wound at once, we are safe."

One might be led to suppose, from such a statement as the last, that Cæsarean section was then a common operation. I don't think the writer intended to mislead, but that he was grandly theorizing on general grounds, as was his style at times.

The idea of the systemic action of infectious agents strongly impressed the men of the last century, especially after the introduction from Constantinople of the custom of inoculating for small-pox. Some seem to have had the kind of faith which is said to move mountains; for we are told of one surgeon who inoculated his own daughter from the pustule of a dead patient.

Mechanical causes for pathological phenomena were by no means overlooked; and one finds the old surgeons asking themselves such questions as, "Why in necrosis of the tibia, does the sinus open forward and not backwards?" "What advantage can there be in gum lancing if the tooth is not thereby made to protrude?" and then shrewdly giving the expected answer.

The delicacy of new-formed tissue of any kind was a constant dread after inflammation, on account of its liability to break down. We are constantly reading of old wounds breaking out and old fractures giving way, until we almost suppose that physiological processes were less vigorous in those days than they are now.

Granulations, too, were matters of considerable anxiety, and *proud flesh* was most diligently rooted out. Here is a definition of granulations, "A newly-formed substance, generally red in color and having the power of secreting pus." And Bell says that "pus is formed from the serous part of the blood by a process of fermentation."

One would suppose, too, that various forms of ulceration were more common then, for cause and effect are most astonishingly confused. Amenorrhea was feared, not because it might be indicative of some serious general disturbance, but because it gave rise to "menstrual ulcers."

We still see pus at times; the hygiene of our people is not yet so perfect but that felons and other abscesses still occur, and we have not yet learned to abort them. Of course, in those old unclean days pus abounded and was constantly sought. *Ubi* pus, *ibi evacua*, was ever in the surgeon's mind. What we call the shirt-stud felon was the especial delight of some of those old pundits, and seems to have figured in all their clinics. Free scoring was ever being taught, and very properly; but it was in a limb the source of tetanus that the knife ran riot, supplemented by the extensive application of the actual cautery. To drain off and extirpate the morbid humors was the constant effort, at whatever expense. Counter-openings in the scalp were almost the rule, in order to prevent a dissecting abscess, and hot poultices were hourly applied. Constant attempts were being made to find some means of changing the discharges to a laudable character. Abscesses were thoroughly flushed and filled with antiseptic balsams; boils were curetted; and bubos were dissected out and left open, the cavity being filled with powdered calomel, which was in great vogue with some surgeons. Again, after an antiseptic washing, abscesses were sometimes closed up, and were said to adhere under a tightly compressing bandage.

On the other hand, cold abscesses and chronic local suppurations were less hastily meddled with; and it was commonly taught that suppurating glands in the neck should be left to ripen, and should then be opened by a small transverse cut, as thus an imperceptible scar resulted. For the frequently resulting sinus, wine, spirits, and lime-water were recommended as injections. Some of the applications in extreme degrees of inflammation sound heroic; among others mustard and cinnamon are urged; and an essential for all non-evaporating dressings was oiled silk.

In erysipelas, Sir Astley Cooper prescribed immense amounts of quinine, alcohol and a generous diet, with local applications of camphor and spirits of wine.

Much of this is good surgery and classical surgery. It is not the teaching of thirty years ago, but of one hundred and three hundred years ago. These things were done before ether had been dreamed of, or the theory of fermentation had germinated; yet broad lines were steadily being laid down on which we are now building our modern practice.

As we know, too, inflammations, when once under way, were sorely dreaded, and various forms of gangrene were far from unusual. One reads of the common occurrence of hiccough as the characteristic sign of gangrene, and of the frequency of moist gangrene from excessive inflammation.

I doubt if one man in five hundred, among the younger generation of surgeons to-day, has ever seen a case of that fearful scourge — hospital gangrene — which used to rage through whole cities.

(To be continued.)

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THE GONOCOCCUS.

BY HENRY DEXTER CHADWICK, M.D.,
Surgical Interne, Boston City Hospital.

Previous to the discovery of the gonococcus by Neisser in 1879, various theories were entertained regarding the identity and cause of gonorrhea, many believing it to be simply a catarrhal process and not a specific disease possessing contagious properties which were capable of transmission. They brought forward as evidence cases of urethritis which they believed were contracted from contact with menstrual or leucorrheal discharges, and that the inflammation produced was due to irritative properties and not to any contagious element which they contained.

Opponents to this theory held that true gonorrhea was a distinct disease of itself, and could only be reproduced by infection from a gonorrheal discharge; and they showed by experiment that pus from an abscess or leucorrheal discharge did not always cause an urethritis, and when it was successful in producing a purulent discharge, there was no definite period of inoculation, the duration was short and it was easily cured. The similarity of gonorrhea and syphilis in their method of communication led to the belief that they were identical and produced by the same unknown virus.

A comparatively few observers would not accept this conclusion; and among their number was John Hunter, who, in 1767 in his endeavor to prove the non-identity of the two diseases, inoculated himself with pus from an acute urethritis, but unfortunately the patient from whom it was secured was also suffering from an unrecognized syphilis, and the initial lesion and manifestations of syphilis which followed only served to confirm the belief that the two were identical. After many years, a reaction followed, and Bell (1793), Hernandez (1811), Ricord (1836) published their very careful observations on several hundred cases, which clearly demonstrated that syphilis and gonorrhea were distinct diseases. From this time on the belief that a specific contagious element was contained in gonorrheal discharges became general, and many different micro-organisms were found and put forward by their discoverers as the cause of the disease. Not until 1879, however, was anything of value accomplished. In that year Neisser described a diplococcus which he found constantly present in the purulent discharge from severe cases of urethritis and ophthalmia purulenta, to which he gave the name of gonococcus. This organism can easily be seen in stained specimens of gonorrheal pus, each single coccus being biscuit or kidney shaped, usually lying in pairs with their flat surfaces facing each other, a single diplococcus measuring 0.8 μ in length and 0.6 to 0.8 μ in width. The relatively large size of the organism makes its presence easily recognizable. Multiplication takes place alternately in two planes, thus giving the appearance of tetrads or sarcinæ. In acute cases of gonorrhea the groups of gonococci will be found in large numbers contained within the leucocytes almost exclusively, many of the cells being completely filled. Later in the attack, they become fewer in number, and many are found in groups outside the cell free in the secretion, giving the appearance of having escaped from a degenerated leucocyte.

Many observers confirmed Neisser's discovery, but evidence as to the exact etiological significance of this bacterium was lacking until 1885. This was due to the inability to cultivate and isolate this organism from several other bacteria, which resembled it morphologically, and to the fact that the human urethra had to be used for inoculation experiments, as all animals so far as known, are immune to the disease. Lestikow and Löffler were able to cultivate a diplococcus on a medium composed of serum and gelatin. Then Bumm (1885) published his investigation, which is now considered a classic in bacteriology. He employed blood-serum obtained from a human placenta as a culture medium, but even on this material cultures were not easy to obtain, as other more rapidly growing bacteria would overrun the surface before the gonococcus reached a visible growth. The most favorable temperature is from 30° to 34° C. Development does not occur below 25° or above 38°. Sternberg has found that when exposed to a temperature of 60° for two minutes, gonorrheal pus loses its virulence. Even under the most favorable conditions, development is slow and uncertain; frequently pus containing gonococci in large numbers will fail to show any development, or after a slight development, degeneration occurs and the growth disappears. Cultures on serum show a very thin, scarcely visible layer with a slightly moist, shiny surface, which appears a grayish-yellow color by reflected light. Sternberg says the growth may extend out a distance of one millimetre beyond the needle track; but at the end of two or three days no further development occurs and degenerative changes take place.

The gonococcus is aërobic, but whether facultative anaërobic or not is difficult to determine, although when stick cultures are made, no growth occurs along the line of puncture. Bumm also, was the first to furnish the final evidence proving the pathogenesis of Neisser's gonococcus by inoculating a healthy female urethra with a second and finally a twentieth generation of the pure culture, and each time producing a characteristic urethritis. He also pointed out that it was essential to transplant the cultures every few days, as the organism was very short-lived. Haberda recently found that no urethritis developed in cases of paralytics which had been inoculated with gonorrheal pus which had been dried one hour or more.

Observations by Bumm and others since then show that the inflammation takes place in the following manner: When gonococci are deposited on the mucous membrane of the urethra, they penetrate through and between the superficial cells, and eventually reach the deeper layers of epithelium and lymph spaces between them. The irritation which their presence excites causes an active hyperemia with exudation of serum and leucocytes. There is also increased glandular activity and exfoliation of epithelium. The leucocytes become very abundant, and during their passage out absorb and carry with them large numbers of gonococci. When the leucocytes have succeeded in removing the infecting organisms and the cells containing them have been removed, the process subsides. The process is slower in the glands, and the gonococci remain in them much longer than in the other parts of the mucous membrane.

The importance of the gonococcus is very great, particularly in diseases of women. Hatzfeld recently published an analysis of 2,124 gynecological patients, of which 376 had gonorrheal disease of the tubes and ovaries, and a very large number of these were proved by bacteriological examination. Nöggerath goes so far as to say that nine-tenths of all pelvic diseases of the female are of gonorrheal origin. A reliable method of culture would be of great advantage in arthritis following gonorrhea, also of immeasurable value frequently in medico-legal cases. Many since Bumm have tried to find culture media on which the gonococcus would develop readily.

Von Schrötter and Winkler (1890) cultivated a diplococcus on plover-egg albumin. No inoculation experiments were made. They were not able to grow it on albumin of the hen's egg. Anfuso (1891) obtained cultures of the gonococcus on a medium composed of fluid taken from the knee-joint in a case of chronic synovitis. A characteristic attack of gonorrhea followed, when a healthy urethra was inoculated with the twelfth generation of this culture. No growth could be obtained on solidified ascitic fluid.

Wertheim recently found that the gonococcus would grow more readily on plates containing a mixture of one part human serum and one to two parts of peptone, agar-agar, or gelatin, than it would on serum alone. On this medium he reports that the gonococcus developes rapidly, and at the end of twenty-four hours, fine transparent colonies could be seen. His work is more valuable as inoculations were made on five paralytic patients with positive results. These investigations were confirmed later by Gehhard.

Steinschneider modified Wertheim's serum-agar medium by adding urine; on the supposition that some of the urinary salts were needed for gonococcus growth. On this gonococci developed, as was proved on a human urethra.

Recently Wright (1894), following in general the method of Steinschneider, succeeded in growing from several cases of urethritis, ophthalmia purulenta, pyo-salpinx and vaginitis, a diplococcus apparently identical with the gonococcus, and in cultural characteristics corresponding with the description given by Wertheim. Only in very fresh cases could a culture be obtained, and even those could not be depended on to develop. He did not confirm his results by inoculation.

Weifser (1894) reports a case of arthritis of the hip following gonorrhea. Fluid was aspirated, and cultures made on serum-agar, which showed the gonococcus.

This could be transplanted on the same medium. A culture was also made on glycerine-agar, which showed a very slight growth; this, however, could not be transplanted. He believed the growth obtained on the agar in this case was due to the small amount of synovial fluid left on the surface when the agar was inoculated, and in this the gonococcus developed.

Kral (1894) obtained good results by using a medium composed of two per cent. agar-agar in bouillon which contained no Na Cl, one or two per cent. saccharose added and mixed with serum, and the whole boiled, filtered and the filtrate used for cultures. He also modified this mixture by adding five per cent. glycerine, which seemed to be an improvement.

Keifer (1895) concluded from the fact that the gonococcus develops best within the leucocytes, and as they were the peptone carriers, that that was the substance needed in culture media. Consequently he tried a mixture of equal parts ascitic fluid (by preference from persons affected with abdominal tumors) and glycerine-agar, peptone three per cent. to five per cent. On the medium he says the gonococcus will always develop with or without other bacteria. By reviewing this different culture media upon which the gonococcus has been successfully cultivated, it will be seen that in nearly every instance blood-serum has been an important constituent. A few have added urine to the serum mixture in order to get a medium which corresponded as nearly as possible with the conditions present in the urethra. From the published results, however, it does not seem to be of any distinct advantage over the serum or serum-agar mixture. The fact that the gonococcus develops rapidly in ophthalmia and on other mucous membranes with which the urine does not come in contact, seems to show that the urine or its salts are not essential for growth or virulence. Turro, of Barcelona,[1] published an article in which he claimed that what was needed for the cultivation of the gonococcus was an acid medium, and points out that although freshly-voided urine in gonorrhea is alkaline, this reaction is due to the pus contained in it, and when this has settled the supernatant liquid is acid. In this acid urine the gonococcus develops rapidly; and from observing this phenomenon the idea was suggested that it might be due to the acidity of the urine. Accordingly, he prepared culture media of various degrees of acidity to test its accuracy. It was found that on ordinary nutrient gelatine which had not been neutralized, the gonococcus developed readily. Even the addition of a drop of hydrochloric acid to each one hundred cubic centimetres did not prevent its growth, only retarded it.

Equally important was his success in reproducing the disease by inoculating dogs with the gonococcus grown on acid media. An intense purulent inflammation would follow the introduction of a little of the culture under the prepuce, without necessarily injuring the mucous membrane or introduction into the mouth of the urethra. In some cases the process thus set up would extend to the bladder and kidneys, or a septicemia or pyemia might follow. The process in bitches was less severe. Gonococci obtained from these lesions were a little smaller, but in other respects identical with those in man. It was found that these organisms when transplanted onto alkaline media, lost their pathogenic power, while on acid media their virulence was retained for a month or more. The importance of these results, if they could be confirmed, would hardly be overestimated.

A simple medium on which the gonococcus would readily grow, and at the same time being acid preventing the development of most of the other bacteria, would be an ideal one. To test the accuracy of Turro's results I prepared some unneutralized agar-agar, ten per cent. gelatine and mixtures of these two, also beef-blood serum and human hydrocele fluid; the two latter were made acid with hydrochloric acid. Gelatine was used considerably, but agar was preferable as the cultures could then be kept at the body temperature.

Most of these cases were patients of Dr. Lund in the Out-Patient Department of the Boston City Hospital. No attempt in selection was made, and cultures were taken regardless of the duration of the attack.

URETHRITES.

Case I. Duration, one week. Cover-glasses showed many gonococci, both within and out of the leucocytes. Cultures showed numerous white colonies of a small diplococcus.

Case II. Four days' duration. Considerable purulent discharge, containing many typical gonococci. Cultures showed numerous white colonies of diplococci.

Case III. Two months since infection. Now only a slight purulent discharge in which few gonococci were found. A few colonies of diplococci developed on culture, also several yellow colonies of cocci.

Case IV. Patient had a severe balanitis and a foul discharge from underneath foreskin; also a slight discharge from urethra, the remains of an acute gonorrhea three months previous. Cover-glasses were literally filled with bacteria of many kinds: cocci, streptococci, both in and out of the cells. No typical gonococci were found. In culture few colonies of diplococci, but many yellow colonies of cocci developed.

Case V. Duration four weeks. Discharge stopped once under use of injections, but soon returned and an acute epididymitis developed, for which he first came for treatment. There was only a slight muco-purulent discharge, in which very few gonococci were found. Colonies of diplococci and cocci developed on the culture medium.

Case VI. Seven months since infection. Discharge has been intermittent since, after stopping for a time; any indiscretion in diet or drink would start it up afresh. A slight muco-purulent discharge was present in which a few diplococci were found outside the cells. No gonococci were found in the leucocytes. Few white colonies of diplococci and yellow cocci showed in cultures.

Case VII. Two months' duration. A small muco-purulent discharge was present. No cover-glass preparations were made. Many colonies of diplococci developed on culture media.

Case VIII. A slight muco-purulent discharge remained from an acute attack seven months before. Many colonies of diplococci developed. Also a few yellow collonies of cocci.

Case IX. A chronic gleet, duration unknown. Few white colonies of diplococci appeared in pure culture.

Case X. Three months since infection. Very slight muco-purulent discharge. Many yellow colonies of cocci, also a few colonies of diplococci, developed.

Case XI. Patient of Dr. H. E. Marion, who consulted him for some obscure bladder trouble. A slight muco-purulent discharge was noticed, from which a culture was taken which showed many colonies of diplococci in pure cultures. No history of a previous gonorrhea was obtained.

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[1] Centralbl. f. Bact., July, 1894.

CASE XII. Duration over three months. Discharge practically stopped, and only noticed in the morning. Came into hospital for treatment of a mild conjunctivitis. A culture was obtained from the urethra, which showed many colonies of diplococci and a few of yellow cocci.

CASE XIII. Was being treated for stricture caused from an attack of gonorrhea three years previous. Culture from the slight discharge showed a few white diplococci and also a yellow coccus.

CASE XIV. Last attack of gonorrhea two and a half years ago. The only trouble remaining was a slight stricture and a very little discharge. No gonococci were found in cover-glasses. On culture the same typical diplococcus appeared, with few yellow colonies of cocci.

CASE XV. Three months' duration. Only slight discharge. No cover-glasses were made. Very few diplococci developed on culture media. Also a yellow coccus was present.

CASE XVI. Three months since gonorrheal attack. A gleety discharge remains. Culture showed pure colonies of a yellow coccus. No diplococci.

CASE XVII. Eight months since the disease was contracted. A very slight discharge remained, and a slight stricture was found to exist. Cultures showed but one or two colonies of diplococci, but very many colonies of a bacillus were present. This organism, in morphology, gas production, indol reaction, and acid formation as seen in milk and on litmus agar, was identical with the bacillus coli communis.

CASE XVIII. Two weeks' duration. Discharge quite abundant. Gonococci present in leucocytes. Cultures showed a few typical white colonies of diplococci. Also many colonies of a distinct yellowish tinge of a larger average diameter than the white colonies. These also proved to be diplococci, but about twice the size of the small white diplococcus.

CASE XIX. Two weeks' duration. Considerable discharge. Many gonococci found in the pus. Cultures showed the white diplococcus.

CASE XX. Ten days since exposure. For last few days a slight discharge was noticed, which when seen at the hospital, looked like clear mucus. From this a very few slightly yellowish colonies of a large diplococcus were obtained in pure culture.

ARTHRITIS FOLLOWING GONORRHEA.

CASE I. Patient came under the care of Dr. J. B. Blake in the Surgical Out-Patient Department of the City Hospital for synovitis of the left knee-joint. A history of gonorrhea two months previous was obtained, which lasted about three weeks. Nothing was noticed since, except a little whitish discharge sometimes seen at the beginning of micturition. Ten days ago a little tingling and soreness was noticed in the left knee, which was considered of no consequence until the last three days, when the knee became so swollen that he came in for treatment. On examination the knee was found much swollen, especially both sides of the patella, which floated, and fluctuation could easily be made out. There was but slight tenderness, and only on pressure. Besides the knee, there were no constitutional disturbances. No discharge could be obtained from the urethra, but a needle was inserted into the meatus and cultures made. At the same time cultures were also made from blood obtained from the ear. The ear was first washed off with alcohol and pricked with a sterilized needle. Three culture tubes were inoculated from the blood; and in all numerous white colonies of diplococci developed in pure culture, which were identical in appearance, both microscopically and macroscopically with those from the urethra, although in the latter cultures besides several colonies of diplococci, cocci and a short oval bacillus developed. Three days later the patient appeared with a very painful synovitis of the other knee. The left ankle was also slightly painful, and he felt so ill that admission to the hospital was recommended. Soon afterwards while in the ward the right hip became similarly affected.

CASE II. Patient of Dr. Rotch, Boston City Hospital. When he entered the hospital he had been suffering from an arthritis of the hip for four weeks, following a gonorrhea contracted two weeks previous. There was some urethral discharge to be seen. Two years before he had had similar trouble with the same hip joint following gonorrhea. Cultures from the blood were made. The ear, however, was not washed off, as having no alcohol at hand this procedure was neglected. Two kinds of diplococci developed on the media: one, a small organism having white colonies; the other, a much larger diplococcus having colonies of a slightly yellowish tinge. It is to be regretted that no cultures from the urethra were made at this time, as he had been discharged when I went to see him again.

OPHTHALMIA NEONATORUM.

CASE I. I am indebted to R. D. Dean, externe at the Boston Lying-in Hospital, for the history and cultures from this case. A purulent ophthalmia began to develop three days after birth and continued for several days, but readily yielded to treatment with silver nitrate. When cultures were taken on the eighth day, there was but little purulent discharge. The only bacteria found in the pus were a very few large cocci outside the cells. Cultures showed many cocci and a very few colonies of a small diplococcus.

PYO-SALPINX.

These cases were kindly furnished me from the St. Elizabeth's Hospital by the house-officer, Dr. F. P. Williams.

CASE I. No history of gonorrhea could be obtained. The tube was distended, and there was a small cyst of the ovary. Cultures taken from inside the tube and ovary proved sterile.

CASE II. This was said to be of gonorrheal origin, but the infection dated back six years. Cultures from these tubes showed several varieties of bacilli. No diplococci appeared.

VAGINITIS OF CHILDREN, FROM CHILDREN'S HOSPITAL.

The first two cases occurred in the service of Dr. Buckingham; the third in Dr. Burrell's.

CASE I. Severe vaginitis, with much inflammation and purulent discharge of many days' duration. Gonococci found in the pus. Cultures showed only yellow colonies of cocci.

CASE II. Supposed to have been infected from the former child. Severe attack of vaginitis, with much purulent discharge in which gonococci were found. Cultures showed cocci and few colonies of diplococci. Two weeks later gonococci were still found in the pus. A culture at this time showed only colonies of diplococci.

Case III. The following history was taken from the records by kind permission of Dr. Burrell: Child, one year and eight months old. Had been to Wellesley convalescing from an empyema, and returned to Out-Patient Department April 6th. Redness and slight ulceration was noted on labia minora and majora. Some discharge from vagina. April 8th, ulceration had spread rapidly. Labia majora red and slightly swollen. On retracting the labia a superficial ulcerative process of considerable extent was seen. The upper third of both labia minora had been destroyed, and the ulcerative process extended up on the left labium majus. The surface of the ulcer was grayish and the edges not indurated. April 10th, ulceration seemed to be extending but little, and the opposing surfaces of the labia minora were ulcerated. April 15th, ulceration slowly getting into better condition. General condition improving and child cried less. April 25th, ulcerations much diminished, and continued to improve till May 8th, when they were entirely healed.

At one time there was a fine papular eruption on the buttocks, which was of a very few days' duration only, and considered to be due to irritation. At entrance there was a temperature of 101.5°, which gradually fell to normal by the end of the first week. During the whole attack there was considerable purulent discharge, and this continued in a small amount after the ulceration had healed. The process, whatever its nature, yielded with great difficulty to antiseptic treatment. No gonococci could be found in the discharge but a bacillus of varying length was found both within and outside the leucocytes. No other organism was present. Cultures were made and many bluish-white colonies of a short, thick bacillus with rounded ends developed in pure culture. This was transferred to other media; and its growth, gas production, acid formation (as seen on litmus agar and in milk), indol reaction and failure to stain by Gram's method, showed it to be identical with the bacillus coli communis.

Apropos of this last case is a urethritis in a male reported by Van-der Pluym and Laag.[2] In this case a purulent discharge similar to gonorrhea developed seven days after coitus. There was also considerable febrile disturbance. No gonococci could be found in the pus, but instead a bacillus of varying length was found within the leucocytes, from two to six or seven in a cell. Rarely was one found free in the secretion.

Cultures were made, and the bacillus proved to be identical with the bacillus coli communis in all respects. The authors claim that this organism was the cause of the attack, because it was an acute infectious disease with febrile reaction. The bacillus was found within the cells, and all other bacteria were absent. The prostitute from whom the disease was contracted could not be found to be examined. In this connection it will be remembered that Case XVII of my series of urethrites also showed the bacillus coli communis.

(*To be continued.*)

RECURRENT OCULO-MOTOR PALSY WITH A CASE.[1]

BY G. E. DE SCHWEINITZ, M.D., PHILADELPHIA.

Recurrent oculo-motor palsy is of sufficient rarity and interest to justify the record of each additional case, and therefore I report the following example of this affection:

Kate Y., unmarried, aged thirty, American born, a cigar-maker by trade, applied to the Ophthalmic Department of the Jefferson Medical College in the latter part of December, 1894, for relief from violent attacks of neuralgia and complete oculo-motor palsy of the right side.

Family History.— Her mother suffered from right hemiplegia at the age of forty-one, never fully recovered, and died suddenly three years later. Two brothers and one sister are living and in good health. One brother died in infancy from an accident. The history on the paternal side of the family was not obtainable.

Personal History.— When one and one-half years of age, the patient became violently ill with the following symptoms: vomiting, convulsions, right divergent strabismus and ptosis. At the end of six weeks the ptosis disappeared, and the eye returned to its proper position. Since this date she has suffered from frequent attacks of neuralgia, almost always associated with divergence of the right eye and closure of the corresponding lid; occasionally, although the pain was severe, the ocular symptoms were absent.

During childhood the explosions of pain were frequent, occurring as often as three times a week; lately the maximum number of attacks has been five or six a year, and sometimes she has been free from them for six months at a time.

With the exception of whooping-cough, measles, scarlatina and epidemic influenza (three years ago), each disease being accompanied by a violent attack of migraine and recurrence of the ocular palsy, she has enjoyed good health. Menstruation was established at thirteen years of age, is regular in appearance, and unaccompanied by pain. A history of syphilis was not obtained.

When she was about four years of age (although she is somewhat uncertain as to the date), the divergence, which had before that time disappeared *pari passu* with the subsidence of the ptosis, became more or less permanent, although she thinks that in her best condition, even though the eye turned outward, power still remained to bring it to the median line. In September, 1898, an unusually severe attack of neuralgia occurred, accompanied, as usual, by ptosis; but when the pain disappeared, the ptosis remained. Since the date of permanent ptosis she has suffered about half-a-dozen mild attacks of neuralgia, unaccompanied by notable ocular changes.

The Neuralgic Attack.— Preceded by dizziness, a full feeling of the head, swelling of the peri-orbital tissues and distention of the veins; the pain begins in the right eye and travels around the right side of the head to the occiput, where it finally settles and remains until the subsidence of the nerve-storm. Immediately following the onset of the pain, there is vomiting, which lasts from twelve to twenty-four hours, and leaves the patient utterly dejected and exhausted.

When examined (December, 1894), the following conditions were present. Complete paralysis of the oculomotor nerve, the divergence being extreme and the eyeball slightly prominent. It can be rotated outward one centimetre, and there is slight rotary movement noticed when an attempt is made to turn the eye downward and outward. From the position of extreme divergence, the right eye can be rotated inward about two millimetres. The pupil is absolutely fixed, horizontally oval, its long diameter six millimetres, and its short four and one-half millimetres. The central color perception is good, and the form field normal.

Vision is $\frac{6}{60}$, or somewhat better, if the test card is held downward and to the right. The optic disc is gray-red in color, nearly round, and contains a small physiological cup. The scleral ring is sharply cut to the temporal side, and there is a slight remnant of the choroid ring on the nasal edge of the nerve-head. The general retinal circulation is normal.

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[2] Centralbl. f. Bact., May, 1895.

[1] Read before the American Ophthalmological Society, July, 1895.

The left eye presents no abnormality, vision and accommodation being natural and the ophthalmoscopic changes unimportant, possibly slight grayness in the deeper layers of the disc, with superficial capillarity. The iris movements are normal.

Briefly recapitulated, the points of this case are the following: Right oculo-motor palsy at the age of one and one-half years; recovery in six weeks; frequent recurrence of the ocular palsy, associated with severe neuralgia and followed by complete recovery of the paralyzed muscles during the intervals, until the patient's fourth year, when the divergence remains, but the ptosis successively recurs and disappears as heretofore; finally, permanent ptosis at the twenty-eighth year, after the most violent attack of pain of the whole series, and the present appearance of complete permanent right oculo-motor palsy. Other nerves are not involved in this case, for example, the abducens, facial, or trifacial.

It is unnecessary to review the literature of this affection, which has recently been done in a masterly manner by Dr. Philip Coombs Knapp.[2] From Dr. Knapp's researches we learn that about forty cases of this affection have been reported; that it affects the two sexes nearly equally (twenty-one women, eighteen men); that in the majority of cases the disease begins in early life and usually, as in my case, with vomiting and severe pain, and that soon after the pain oculomotor palsy has occurred.

According to Knapp, after a varying interval, from a week to four years, the attack recurs, rarely at a definite period, for example, the menstrual epoch. If the clinical history of my patient may be trusted, in her early life the attacks recurred with greater frequency than the shorter intervals just mentioned, namely, bi-weekly.

In a certain number of the cases, although there was complete recovery from the ocular palsy, in the intervals between the earlier attacks, a gradually increasing paralysis was observed, which finally became permanent (Roosa's case and my own).

In three autopsies thus far reported (Knapp, *loc. cit.*) the following lesions were found: inflammatory thickening of the nerve (Gubler); tubercular mass pressing on the nerve (Weiss); fibrochondroma separating, without destroying the nerve fibres (Thomson and Richter). Knapp concludes "that recurrent oculo-motor palsy is due to some vascular change, inflammatory or edematous, in a focal lesion involving the root of the third nerve. As the edema or exudation subsides, the conducting power of the nerve is wholly or partially restored, and the paralysis disappears. In some cases the lesion may involve several nerves, and the exudation may affect only a part of the lesion, involving different nerves at different times. As the lesion progresses, it may finally affect the nerve so far as wholly to destroy its conducting power, leading, as in Roosa's case, to permanent and total paralysis." The last sentence describes accurately the course of events in the case reported to-day.

Treatment — mercury, iodides, strychnia — was faithfully tried without avail; and Dr. Bochroch, Chief of the Clinic for Diseases of the Nervous System, carefully and skilfully used electricity for several months without favorably affecting the paralyzed levator.

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THE CONDITION OF THE NOSE IN PHTHISICAL PATIENTS.

BY J. PAYSON CLARK, M.D.,
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IT seems not out of place as a preface to the following observations to review briefly our present knowledge of the functions of the nose as a respiratory organ, and of the structures most necessary to the proper carrying on of these functions. Bosworth, writing on this subject, says: "The nasal passages contain an exceedingly important, perhaps the most important, and certainly the most intricate apparatus, connected with the function of respiration, of the whole respiratory tract, and one on whose normal functional activity depends the integrity of the whole of the mucous membrane of the respiratory tract below."

Before speaking of this "intricate apparatus" let us see what are the functions which it should normally perform. The two most important functions of the nasal chambers are to thoroughly warm and moisten the inspired air. Another function apparently less thoroughly performed is the arresting of mechanical dust, while a possible fourth, not as yet sufficiently established to rank with the others, is the destruction or diminution of the vitality of pathogenic germs. It is only comparatively recently that the existence of any of these functions has been recognized and demonstrated. In 1885 Bosworth, largely from clinical observation, advanced the theory that the five thousand grains of water, estimated by physiologists to be taken up in twenty-four hours by the inspiratory current of air from the whole respiratory apparatus, is derived solely from the nasal chambers. He further stated that "it is absolutely necessary and essential for the integrity of the lower air-passages that the air which reaches them should be so far charged with moisture that they should not be robbed of any of their secretion."

The organs for serous transudation are the large plexuses of blood-vessels covered by mucous membrane and lying on the inferior and middle turbinated bones, the so-called erectile tissue of the turbinated bodies. The special method of this transudation we do not yet know, unless it may be through the minute canals, running at right angles to the mucous membrane, penetrating to the lymph channels, as described by Chatellier. These large reservoirs of blood must also be, to a great extent, the source of the heat which the inspired air acquires in passing through the nose. Aschenbrandt proved in a series of experiments published in 1886 that the temperature of the air in passing through the nose is raised to 86° F. As the temperature of the expiratory current in ordinary respiration is 86° F., the warming of the air in respiration must be done exclusively by the nose. He also found that air in its passage through the nose is saturated with moisture, and that mechanical dust is completely arrested in the nose. Kayser's observations in the same direction confirmed those of Aschenbrandt, except that he did not find the nose as perfect a filter for mechanical dust. Block reaches practically the same conclusions except that he "finds the expired air reaches only to two-thirds of the saturation point, and that the heating capacity of the oral cavity is inconsiderable."

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[2] Boston Medical and Surgical Journal, vol. cxxxi, pp. 308-312, 1894.

The only function remaining for me to speak of is one not fully established, and certainly not generally recognized, namely, that of destroying the vitality of pathogenic germs. "According to Wurz and Lermoyez nasal mucus not only serves to mechanically arrest the irritating particles contained in the atmosphere, but it plays a much more active rôle by destroying the vitality of a large number of pathogenic bacteria. . . . This bactericidal action of nasal mucus showed itself in almost all varieties of microbes, the intensity of the effect produced alone presenting a certain degree of variation."

Such being the important position of the nose in the respiratory tract, and such being the duties assigned to it, the importance of its healthy condition to the rest of the respiratory tract and so to the whole economy is readily perceived. If the individual possesses a strong vitality, if the lung tissues are unweakened by any hereditary predisposition or unaffected by any actual disease, a considerable amount of impairment or suspension of the nasal function can be borne without any apparent injury to the respiratory tract, or with perhaps only an occasional attack of pharyngitis, laryngitis or bronchitis. But when the individual inherits any tendency to phthisis pulmonalis, or when the lungs have already become diseased, it appears to the writer difficult to overestimate the possible evil result of impairment of the respiratory functions of the nose.

With some such thoughts as the above in mind I began to make notes of the condition of the nasal chambers in the patients affected with phthisis whom I saw in the Throat Department of the Boston Dispensary and Massachusetts General Hospital. Finding that in this way I should be a long time collecting sufficient data for my purpose, I was enabled, through the kindness of the physicians on service at the time, to make a rhinoscopic examination of the phthisical patients at the Good Samaritan, the Free Home for Consumptives (in Dorchester) and at the Carney Hospital.[1] In these various institutions I examined in all one hundred phthisical patients. I also, in the Out-Patient Department of the Massachusetts General Hospital, examined the noses of one hundred patients who came for affections not connected with the nose, throat and lungs. These latter I took as examples of the condition of the nose in the average individual. I divided the cases into those which showed marked atrophy of the turbinates, those in which the atrophy was only moderate, and those in which the atrophy was slight or none. I also noted the existence of a ridge or deviation, obstructive or only moderately so. As markedly atrophic I considered those cases in which there was only a trace of the turbinated bones or in which the tissue was so shrunken over them that the outline of the bony framework could be distinctly seen, there being practically nothing left of the turbinated bodies. I considered moderately atrophic those cases where the turbinates still retained some of their normal curved outline but were evidently much smaller than normal. I have grouped the cases which I marked slightly atrophic with those in which there was no atrophy, recognizing the obvious difficulty of distinguishing slight degrees of atrophy. I am also aware that there might be a difference of opinion in a given case as to whether there was moderate, slight or no atrophy. However, as I examined all the cases myself I think the personal equation may be safely eliminated. I also believe that in the phthisical cases I erred on the side of calling a case one of moderate atrophy where it might have been considered marked, or slight where it might have been considered moderate. These headings are, of course, purely arbitrary, and merely for the sake of having some basis for comparison.

Of the 100 non-phthisical individuals, in 56 the turbinates were practically normal; in one case they were hypertrophied; in 25 cases they were slightly atrophied, in 17 moderately atrophied, and in one case markedly atrophied. In none of these cases was there a ridge or deviation which could be considered more than slightly, if at all, obstructive.

The pharynx was noted as being atrophic, or as showing a chronic inflammatory condition, in 14 of these cases. A slight amount of atrophy in the pharynx was quite common.

Of the phthisical individuals examined, 21 presented marked atrophy of the turbinates, 32 moderate, 20 slight and 27 none. This is rather a remarkable showing, namely, over 50 per cent. of the cases with sufficient atrophy of the turbinates to be distinctly noticeable. Of course, it is more than probable that in a number of the cases noted as moderately atrophic, the atrophic appearance was secondary to the constitutional affection, the ex-sanguinated condition of the nasal mucous membrane in advanced pulmonary disease giving the turbinates a shrunken appearance amounting to moderate atrophy. Nevertheless, I shall endeavor to show later that in most cases the atrophic condition preceded the pulmonary affection. This precedence was unquestionable in the case of septal ridges and deviations. Of these there were sixteen cases in which the nasal obstruction was noted as considerable, and 32 in which the obstruction was only slight or inappreciable.

A chronic pharyngitis was observed in 33 cases, but in many of these the condition was so slight that the pharynx cannot be said to have been affected much if any oftener than in the other series of cases.

The larynx showed tubercular infiltrations or ulcerations in 13 cases, in three of which there was marked atrophic rhinitis, in four moderate, and in six slight or none.

There was a positive phthisical family history in 37 cases, and a doubtful one in 14, while the family history was negative in 39 cases, and not obtained in 10.

There were nine patients under twenty years of age, and 25 over forty, the rest being between these two periods; while as regards sex, 69 were males and 31 females.

Did the nasal atrophy, as a rule, precede the pulmonary disease, or was it more often a secondary condition? We can safely say, I think, that in the large majority of cases it existed before the pulmonary affection. In the following table I have taken the probable duration of the disease from the patients' histories.

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[1] I desire here to express my thanks to Dr. Algernon Coolidge, Jr., Dr. Edward O. Otis, Dr. James J. Minot, Dr. William N. Bullard and also to Dr. A. W. Fairbanks, who, as House-Officer at the Carney Hospital, rendered me valuable assistance.

Atrophy of Turbinates.		Probable Duration of the Pulmonary Disease in Years.						
		0–1	1–2	2–3	3–4	4–5	5–5+	No data
Marked	No nasal obstruction	5	1	..	2	..	1	1
	Slight do.	..	..	3	1	1	1	..
	Considerable do.	4	..	..	..	..	1	..
Moderate	No nasal obstruction	8	4	..	..	1	2	3
	Slight do.	3	4	3	..	1	1	1
	Considerable do.	..	1	..	..	..	..	..
Slight or None	No nasal obstruction	10	5	4	1	1	2	1
	Slight do.	5	3	2	..	..	2	1
	Considerable do.	3	1	3	1	..	1	1

From this table it will be seen that of the 21 cases with marked nasal atrophy, in 10 the pulmonary affection had existed less than two years; and that of the 30 with moderate atrophy, in 20 it had existed less than two years. Now I believe it will be generally conceded, that whatever may be its etiology, atrophy of the turbinated bodies is usually a slow process, and consequently in the cases of marked atrophy above mentioned had probably been fully developed before the pulmonary disease was acquired. In some of the moderately atrophic cases, the atrophic appearance of the turbinates may have been dependent on the general anemia and malnutrition accompanying phthisis; but since in 20 of these cases the pulmonary affection had existed less than two years, I think it is fair to assume that in a large proportion of the moderately atrophic cases this condition had existed prior to the pulmonary disease, and was independent of it. Another significant fact is that while of the 100 "control" cases in none was there a ridge or deviation which could be considered more than slightly, if at all, obstructive; of the phthisical cases 16 had ridges or deviations causing considerable obstruction.

While the number of cases is perhaps too small to draw any definite conclusions from as regards the possible etiological relation of these nasal affections to pulmonary phthisis, the results of these observations are certainly significant, and tend to show that the subject might repay further investigation. They also show the importance of a routine examination of the nose in individuals in whom the existence of phthisis is suspected as well as in those in whom the disease is already established, and the importance of the application of suitable remedies to any existing pathological condition in the nasal chambers.

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Diphtheria in St. Louis.— Health Commissioner Starkloff of St. Louis has made a report to the Board of Health to the effect that diphtheria is practically epidemic in that city, 170 cases having been reported since September 1st.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

ERYSIPELAS-SERUM FOR THE TREATMENT OF CANCER.

Professor Bruns, of Tübingen,[1] reports the results of the treatment of six patients treated with the Emmerich erysipelas-serum — four cases of carcinoma, one of sarcoma, one of malignant lymphoma. Diagnosis was made by a histological examination of a section of the tumor. In no case did the growth seem to be influenced by the treatment in any way. Three patients at once, after the injection, had short attacks in which the respiration and cardiac action were disturbed to a marked, almost dangerous, degree. In all there was a rise of temperature and disturbance of the general condition. In one case the fever lasted eight days. The cause of these disturbances was probably a non-sterile condition of the serum.

CAUSE OF DEATH FOLLOWING BURNS.

This subject has been studied by Reiss[2] exhaustively, for the purpose of learning the true explanation of the cause of fatal results in severe burns not due to shock, sepsis, or similar explainable complications. The article is an interesting one, and describes at length a careful laboratory investigation, the conclusion of which is that from the urine of fatally burned patients a substance was obtained thought to be pyridine, which when injected into animals produced somnolence, anuria and vomiting. At autopsy, without appreciable pathological changes it was found that the expressed juice of the liver, kidney and spleen had a peculiar empyreumatic odor. Reiss believes that the symptoms in the fatal cases are probably produced by the action of the pyridine or animal oil, or analogous substance. This is found increased in the urine when patients show improvement. In fatal cases the quantity in the urine remains small.

In regard to the treatment there is no antagonizing or neutralizing substance to pyridine that is known; hence those methods which free the system as rapidly as possible are indicated. For this purpose Reiss recommends venesection followed by saline infusion, and ablation of necrotic areas to prevent absorption. When vomiting and somnolence occur the result is usually fatal. The other theories as to the cause of death, as well as a good translation of Reiss's article, are to be found in a recent editorial by G. D. Holsten in the *Annals of Surgery*.[3]

LOCAL TRAUMATIC EMPHYSEMA OF THE SKIN AFTER LAPAROTOMY.

Dr. Max Madlener[4] has observed this condition in four cases. The origin, he considers, is probably due to the vomiting following the operation, which forces the air shut up in the abdomen at the operation into the subcutaneous areolar tissue. It is favored by the patient lying with the pelvis raised and by the non-accurate suture of the abdominal wound; also in cases of "ventro-fixation" to the lower angle of the wound.

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[1] Deutsche med. Woch., 1895, xxi, 20.
[2] Arch. f. Dermat. und Syph., 1893, Ergänzungsheft 1.
[3] Vol. xxii, 1895, 275.
[4] Münch. med. Woch., 1894, xli, 24.

EXPERIMENTS ON THE GALL-DUCTS AND THE LIVER.

Nasse, of Berlin,[5] has studied the effect of extirpation of the gall-bladder. Guinea-pigs and rabbits were unaffected. He was unable to corroborate Oddi's results, namely, that dogs after removal of the gall-bladder suffered great hunger, diarrhea and emaciation; that later there also developed a dilatation of the gall-ducts. None of Nasse's dogs showed these symptoms or condition. He also ligated single branches of the hepatic duct. This caused an hypertrophy of those hepatic areas where the biliary currents were unobstructed. In the ligated portions small areas of necrosis were found, also proliferation of the gall ducts and an increase of connective tissue. Rapid atrophy of hepatic cells and shrinking of the affected lobe occurred. This change was complete in four months. The lobe then consisted of fibrous connective tissue and gall-ducts. In cases where the obstruction of the ducts was temporary, the development of ducts and connective tissue was checked, when the ducts became again patent. Even liver cells regenerated after extreme degeneration.

THE RADICAL CURE FOR HERNIA.

Professor Ferguson, of Chicago,[6] has made another contribution to the operative methods for the cure of hernia. The paper is an interesting one, comprising a consideration of the methods now most in use, the advantages and disadvantages of each, and an illustrated description of his own operation as applied to inguinal and femoral herniæ. The latter are what are of interest in this connection; and for a detailed account the reader is referred to the text of the article. The essential features of the operation are as follows: The sac is exposed in the usual way. It is sutured into position *à la* Macewen. Ferguson thinks that the pad formed by the invaginated sac is valuable and should be preserved; the sac should not be ligated and cut off. The transversalis fascia is sutured from the pubic bone to the root of the cord by an especially applied suture. The transversalis internal and external oblique muscles are all sutured under the cord, making the cord subcutaneous, following the idea of Halsted and Bassini. The method with the exception of the suture used is a combination of previous ideas. Its results are satisfactory.

VENTRO-FIXATION FOR COMPLETE RECTAL PROLAPSE.

Arnold Caddy, F.R.C.S. (Eng.), of Calcutta,[7] has successfully treated a patient, age thirty-two, affected with a complete prolapse of the rectum, by the above method. The protrusion of the rectum measured six inches in length and eleven in circumference. There was complete atony of the sphincter. The abdomen was opened by an incision parallel and two inches above Poupart's ligament, on the left side. The large intestine was followed to the rectum, which was elevated till the prolapse was reduced. The gut was then fixed in this position by silk sutures, which transfixed the meso-rectum and then passed through the abdominal muscles. These sutures were fastened subcutaneously, by retracting the skin while they were tied. The appendices epiploicæ were also included in the fine silk suture which closed the peritoneal wound of the abdominal wall. During recovery from the operation defecation occurred daily without detriment to the patient. Patient practically well after one month.

DIAGNOSTIC URETEROTOMY.

H. A. Kelly[8] advises exploration of the ureter through a short longitudinal incision (one-half centimetre) as it passes the pelvic brim, to ascertain its patency or intactness when the surgeon, while operating in the pelvis, is in grave doubt as to whether it has been cut or included in a ligature. The method consists of making a longitudinal cut in the wall of the ureter and passing a small ureteral sound into the bladder through the incision. This demonstrates at once the patency of the ureter and the point of injury or constriction. The cut is closed by fine mattress sutures lightly passed through the outer coat of the ureter. In this way Kelly demonstrated at once constriction of the ureter by a ligature and saved much valuable time. The ureteral wound has healed satisfactorily in all cases (three patients).

SALINE INFUSION FOR SUPPRESSION OF URINE.

Dr. McBurney[9] reports a case in which a quart of salt solution injected into a vein in the arm, apparently saved the life of a patient in whom there was marked diminution in the excretion of urine (four ounces by catheter in twenty-four hours) following the removal of a large calculus from the right kidney. The suppression occurred the day following the operation and was accompanied by nausea, vomiting, headache and symptoms of uremic poisoning. Improvement was immediate after the injection. The case is reported for the purpose of further testing this method.

THE TECHNIQUE OF AMPUTATING LIMBS.

Credé (Dresden) described his method of amputating at the Twenty-third German Surgical Congress,[10] and claims that since it makes no difference whether the operation is aseptic or antiseptic; whether an Esmarch bandage is used or not; and since it is much more rapid than the usual operation, it is especially valuable in military surgery. His method differs from the usual one in that no sutures or drainage are used. [Drainage is usually omitted in the United States.] The wound is approximated and kept dry by the compression bandage, applied as described by the writer. This also controls hemorrhage. Credé contrasts his results with the usual statistics. He claims that not more than one-third of amputations heal by first intention after the usual operation He has collected twenty-two operations in two years — less than half from injuries, the remainder pathological. Two-thirds healed by first intention; the others with small local infections within three weeks, except one (four and one-half weeks).

HOFFA OPERATION FOR CONGENITAL DISLOCATION OF THE HIP.

Hoffa[11] has demonstrated a specimen obtained from a three-year-old child which died of diphtheria after complete recovery from the Hoffa operation. The affection was double. The post-mortem specimen of the pelvis showed that a good joint had been formed.

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[5] Verhand. der deutsche Gesellschaft. f. Chir., xxiii Kongress, 1894.
[6] Annals of Surgery, 1895, vol. xxi, 547.
[7] Loc. cit., 153.
[8] Johns Hopkins Bulletin, 1894.
[9] Annals of Surgery, 1895, vol. xxii, 266.
[10] Verhand. der deutsche Gesellschaft. f. Chir., xxiii Kongress, 1894.
[11] Loc. cit.

The new acetabulum, which at the operation was soft and spongy bone was found to be covered with a complete layer of hyaline cartilage.

OPERATIVE TREATMENT FOR FRACTURE OF THE PATELLA.

Fowler (Brooklyn)[12] has recently called attention again to this method of treatment. He attributes the non- or ligamentous-union of the patella so commonly seen to failure of apposition of fragments, interposition of soft parts or supervention of osseous disease. One danger in operating on these cases is septic infection, with resulting loss of life or impairment of joint function. This Fowler proposes to avoid by postponing operation on these cases till the lacerations of the joint capsule have healed (generally two weeks), and until time has been given to thoroughly disinfect the skin. Then the operation can be performed without exposing the knee-joint. The technique of the operation is fully described by the writer. The essential features are to avoid septic infection; to avoid exposing the cavity of the joint and its structures as little as possible; to operate through the smallest incision possible; to remove all foreign bodies from the joint; to approximate fragments accurately, and fix from without; and to suture wound without drainage, and fix till union with plaster-of-Paris. For fixation he uses a modified Malgaigne hook, and removes with care all substances intervening between the fragments.

DISINFECTION OF KNIVES.

Otto Ihle (Dresden)[13] has investigated the method of sterilizing knives by boiling in a soda solution, and concludes that if a knife is found dull after such treatment it is because the edge has been in contact with other instruments or hard substances, or that the solution was not strong enough. To protect the knife from the former danger it is boiled in a perforated lead box. He also found that the pulverized soda of commerce usually contained only 10 to 20 per cent. of pure soda. It was most often diluted with common salt. Crystallized soda had a more constant composition but is only 38 per cent. soda, the remainder being water of crystallization. By heating this, however, a mass of about 90 per cent. is obtained. Therefore, the crystalline form is the one to be used, and a three-per-cent. solution of this salt is equivalent to a one-per-cent. solution of pure soda. If dessicated crystals are used, a one-per-cent. solution is sufficient.

CARDIAC SUTURES.

Del Vecchio[14] states, that, as the result of his experiment on dogs, treatment by suture of penetrating wounds of the heart in dogs is satisfactory and successful. If called upon to perform this operation on a human subject he would follow the following method which anatomical investigation has shown to be the most desirable: The heart is exposed through an H-shaped incision, made as follows: One cut along the left sternal border of the third rib to the upper border of the seventh. A second is made parallel to this, through the nipple. These two vertical incisions are united by a transverse cut along the fourth intercostal space. The fourth, fifth and sixth ribs are sawn through at the points where they are exposed by the vertical incisions and the entire flaps (skin, muscle, bone) are turned up and down. The pleura is retracted to one side and the pericardium opened.

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Reports of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

TWENTY-FIRST ANNUAL MEETING, BOSTON, JUNE 5, 6 AND 7, 1895.

(Continued from No. 13, p. 324.)

DR. F. X. DERCUM, Philadelphia, read a paper on

TWO CASES OF "RAILWAY SPINE," WITH AUTOPSY.

CASE I. No element of litigation. G. T., forty-seven, single, upholsterer, in good health to October 22, 1890. On that day fell a distance of thirty feet upon a mound of earth, striking upon the back and head; became unconscious, and remained so until removal to hospital same day. At first very much confused; intense pain in back; entire body seemed to tremble. Seen by the writer October 27th. Walked without help. Steps shorter and slower than normal. Complained of pain in the lower dorsal and lumbar regions; and here deep pressure revealed great soreness. Marked pain in this region by flexion, torsion and transmitted shock. Marked spasm of the muscles in this region on movement. Marked tremor of arms and shoulders. Complained of headache and seemed much depressed. Placed in bed on rest cure. Massage attempted, but abandoned owing to painful condition of back. Back became more painful. Spasm of muscles soon almost constant. Rigidity very marked. Back soon became sensitive to superficial pressure. Excessive sweating set in. Tremor more pronounced. Four weeks after admission symptoms at their height. Patient excessively depressed; disturbed sleep; startling dreams; tinnitus aurium; difficulty in passing water. Loss of sensation in both feet. Weakness extreme; unable to stand. Sweating continued unabated. Bowels constipated. Knee-jerks exaggerated. Micturition frequent.

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[12] Annals of Surgery, 1895, vol. xxi, 621.

[13] Arch. f. klin. Chir., 1894, Bd. xlviii, Hft. 4.

[14] Riforma med., 1895, Nos. 79, 80.

Remained in this condition with little change until February, 1891. Spasm of muscles now widespread. Speech spasmodic, resembling that of a person with chill. Plaster jacket worn a month to secure absolute rest. Massage again instituted; well borne, and appeared to be followed by more marked improvement. Patient walked out of hospital in June.

October 21, 1891, again admitted, having suffered some exacerbation of his symptoms. Remained in the hospital, with the exception of a few months each year, until the spring of 1894. During 1892 and 1893 his condition had undergone little or no change. He died suddenly in Camden in the spring of 1894, death being attributed to acute alcoholism.

At the autopsy no gross changes were found in the nerve centres or in any viscera, save slight fatty infiltration of the liver and a slightly granular condition of the kidneys and a few patches of beginning atheroma in the larger blood-vessels. The brain, spinal cord, medulla and pons, the median, ulnar and sciatic nerves examined microscopically, but no changes found of significance. Sclerosis of the smaller vessels not revealed, nor were changes noted in the fibres or nerve cells not attributable to post-mortem changes or to the methods of preparation.

CASE II. H. H. D., forty-six, contractor. Endeavoring to cross a railroad track in a sleigh, January 15, 1893, he was struck by the engine of an express train and tossed in the air, so that the engine and tender passed under his body which in its descent struck the roof of the second car and thence fell to the ground. Taken unconscious to the hospital. Seen in consultation February 13, 1893. Severe, traumatic, left brachial neuritis and left brachial monoplegia, with atrophy of the muscles about the left shoulder. Severe sprain of muscles of back. Right hemianalgesia extending from the foot up to the level of the nipple. Right hemi-thermo-anesthesia extending from the foot up to the level of the false ribs. Exceedingly weak physically, but mentally seemed clear. Mental depression not a marked feature. Seen again May 19th. Previous symptoms again noted. Left brachial monoplegia and muscular atrophy more pronounced. Man looked badly.

November 8th, almost complete loss of voice noted. Patient had had difficulty in swallowing solids, and of late had been compelled to resort almost exclusively to liquid diet. Muscles of right shoulder atrophied. Loss of power in left arm had increased, and atrophy evident in its muscles. Paresis of right half of face more marked, as was also the twitching of the muscles. Muscular twitchings on the left half of face. No reaction of degeneration. Tongue when protruded deflected toward left; left half apparently smaller than right. Taste apparently lost on anterior two-thirds of tongue on either side, and diminished in posterior third. Sensory symptoms previously noted not changed. Distinct diminution of tactile sense, corresponding more or less closely with area of hemianalgesia. Knee-jerks slightly diminished. No ankle-clonus. Never any affection of sphincters. Pupils small, and react feebly to light but readily to accommodation. Urine normal. November 13th, left hemipalsy of larynx diagnosed. It was thought probable that this was nuclear in origin; but thoracic aneurism was considered, though physical examination failed to reveal any symptoms.

January 28th, 1894, right facial atrophy more evident; twitching of facial muscles somewhat less marked. Marked atrophy of left sterno-mastoid and sterno-hyoid and thyroid group; supra- and infra-spinatus muscles markedly atrophied on both sides; the gluteal muscles of both sides atrophied; other muscles of both arms and legs exhibited signs of general wasting. Legs and feet livid, almost cyanotic; feet cold to touch. Excessive varicosity of both thighs, greater upon the left side. Knee-jerks *plus*, but readily exhausted. Tactile sense preserved, but slightly diminished in the right leg and right side of trunk. Decided analgesia of the right leg and right side of the trunk as far as median line and as high as fourth interspace. Thermal anesthesia of right leg and trunk as far as median line and to the level of false ribs.

March 9th, effusion into left pleural cavity, and fluid aspirated. Physical signs of aneurism sought, but not found. Two days later patient died suddenly.

At the autopsy microscopical examination of the brain and cord revealed no facts of moment. A large fusiform aneurism, involving mainly the descending portion of the arch of the aorta, had ruptured into the left pleura. In the latter cavity was found a mixture of serum and blood, the entire pleura being enormously distended. The walls of the aneurism not markedly thickened, nor were calcareous deposits and other evidences of great age present. The aneurism had evidently produced effusion into the left pleura by pressure upon the left pulmonary veins. Abdominal viscera revealed no changes worthy of note. The methods of Golgi and y Cajal not used in examining the brain, pons, medulla and cord.

DR. COLLINS, of New York, said these two cases should teach us quite as much by their negative as by their positive findings. In such cases it did not seem to him that we could expect to detect changes in the brain and cord by the crude methods of Weigert, etc., and that in making anatomical and pathological observations we did ourselves an injustice not to employ the recent methods of staining for the detection of cellular change of the nervous system. The fact that in the second case there was such a gross anatomical change in the vascular system, which in all probability was due to the trauma, was in line with the recent views that through this grand or petit trauma there was brought about in the entire system a vascular change, and that the changes in the nervous system were secondary.

DR. MILLS, of Philadelphia, said he thought the examination should have extended to the dorsal spinal ganglia and their cranial homologues and other intracranial ganglia related to sensory nerves. We now know that the original lesion or injury may be in these parts.

DR. PRINCE, of Boston, said he thought the result of these autopsies showed that the original exciting cause was the psychical and not the physical shock. He did not doubt that finer methods of staining would have revealed changes in various parts of the body, but he did not think one could infer that these changes were the original cause of the symptoms.

DR. FISHER, of New York, mentioned two cases now under observation. In the first the patient had already recovered damages from a railroad company, and there was nothing to be gained by simulation. On the slightest attempt to manipulate the muscles the patient had excessive spasm, and excessive perspiration broke out all over the body. The reflexes were uniformly and always exaggerated. No sensory disturbances. This condition lasted two or three years. He could not conceive such a functional condition continuing where the manifestations of the disease were uniformly the same without there being at the base of it some pathological change. In the second case, after injury there was complete hemianesthesia, involving the whole half of the face and the rest of the body. More or less complete recovery followed in two months. He agreed with the other speakers that there must be some definite lesion yet to be discovered in most of these cases.

Dr. Baker, of Utica, said we had to take into consideration the fact that at the time of the accident there was set in the organism a copy which might be psychical or traumatic, and that the impression then made became perpetuated in a series of mimicries, so to speak: and in studying this series of mimicries we brought out the fact that it was a matter of attention on the psychical side. There always resulted a fixation of attention which might bring about in the higher cortical centres changes anatomical in nature which at present we cannot determine.

Dr. Gray thought that with the advance of histological methods the term hysteria would be done away with, and that changes in the texture of the cells in the nervous system would be found which would demarcate even what we now called the functional forms into distinct and recognizable types under different names. He was unwilling to believe that these traumatic cases of railway-spine were pure cases of hysteria, even assuming that there was a certain class of phenomena which we could provisionally call hysterical.

Dr. Dercum, of Philadephia, said that both autopsies were made under conditions that did not favor great refinement. He was fully convinced that other methods would probably have shown some changes. He believed that the aneurism was due directly to the trauma, bruising the vessel wall with the tremendous force of the blow, and that the left hemipalsy of the larynx was due to the aneurism. It was a curious fact that the hemianalgesia and the hemi-thermoanesthesia never varied in their level or area of distribution. It was a question with him whether we were justified in attributing every case of hemianesthesia at once to hysteria.

FIRST DAY. — AFTERNOON SESSION.

Dr. M. Allen Starr, of New York, gave a

LANTERN EXHIBITION OF PHOTO-MICROGRAPHS OF NERVOUS HISTOLOGY; GOLGI STAINS.

Dr. Edward Wyllys Taylor, of Boston, gave a

LANTERN EXHIBITION OF THE MEDULLA OBLONGATA OF A CHIMPANZEE, WITH OTHER SPECIMENS.

Dr. Thomas Dwight, of Boston, exhibited

THE BRAIN OF A CHIMPANZEE.

Dr. William Townsend Porter, of Boston, read a paper on

THE PART OF INHIBITION IN THE PHYSIOLOGY OF RESPIRATION.

In comparatively recent times the theory of inhibition had been used to explain certain phenomena connected with respiration. The point particularly in question was that of spinal respiration, so-called. It was known that when the spinal cord was cut across between the bulb and the centres for the phrenic nerve, that the phrenic nerve apparently ceased to act. The respiration of the diaphragm was entirely suspended and without artificial respiration death followed in a few minutes. If artificial respiration was done several hours, it was found that on interrupting the respiration a few moments movements of the diaphragm took place resembling movements of respiration. From that it was claimed that the centre from which the impulse of respiration started was not in the spinal bulb, but in the spinal bulb and in the spinal cord, that is, that the respiratory muscle nuclei possessed the power of sending out automatic impulses, and that respiration was the result of the combined automatic action of these individual groups, and not the result of discharge of automatic impulses situated in a single bulb. Section of the spinal cord caused an inhibition of the action of the phrenic nuclei, and this inhibition lasted such a long time that no means of keeping the animal alive sufficed to bridge over this period; consequently, the upholders of the doctrine assumed, first, that the phrenic nuclei were automatic centres. They supported this assumption by a second assumption, that section of the spinal cord caused inhibition of these centres. And if this inhibition theory did not hold good then the original assumption did not hold good, because they could not then explain the uniformly fatal result of the operation.

It was possible, however, to show that inhibition played no part in the physiology of respiration, at least in the part mentioned here. If section was made across one-half of the spinal cord, you got in the majority of cases a standstill of the diaphragm on the same side. If you cut the phrenic nerve during that standstill the diaphragm on this side supposed to be inhibited began to contract, showing that the cells were not inhibited, but merely resting. The explanation of this phenomenon was found in the fact that the respiratory impulse descended the lateral columns, and was ordinarily discharged in greater amount upon the same side. When, however, the respiratory path on that side was interrupted, the greater amount which was discharged on that side passed over to the other side, and these resting cells which previously had received but a small portion of the respiratory impulse now received a greater respiratory impulse, and got enough to begin to contract. It must follow that two hemisections while separating the cord from the bulb could not inhibit the respiration of the phrenic nuclei. If one hemisection did not inhibit, hemisection on the other side would not inhibit its side. It was certain that inhibition of respiration was not caused by a section passing between the phrenic nuclei and the bulb; consequently, the cause of the fatal arrest of respiration following section across the spinal cord between the phrenic nuclei and the bulb could not be inhibition, hence the only explanation left is that the phrenic nuclei no longer received the impulses from the bulb and could not originate respiratory impulses. It followed then that the respiratory centre was not situated in the spinal cord, but in the bulb.

The general application was this: The present doctrine found in the text-books was that the spinal cord contains centres for such functions as micturition, defecation, etc., in the lower part of the cord, and that these centres were, according to Goltz, inhibited by a section of the cord above them. If now the inhibition was proven not to exist for respiration, then it followed with some degree of probability that Goltz's assumption was not well grounded, and on this pure assumption rested the present teaching.

Dr. Theodore H. Kellogg, of Willard, read a paper on

THE PULSE IN INSANITY — ORIGINAL STUDY OF CASES.

Dr. Kellogg's conclusions, based upon a study of 2,172 cases, were that there was considerable increase in the frequency of the pulse in both sexes in confirmed cases of insanity. Intermittence and irregularity of the heart, cardiac symptoms and valvular lesions were found in about 10 per cent. of all established cases of mental disorder. Abnormal sphygmographic tracings were to be found at some stage of the disease in the vast majority of cases of insanity. They were due to affections of the cortical and spinal motor and vaso-motor centres, to various lesions of the sympathetic, to disorders of the pneumogastric, to peripheral and central vascular changes, to degenerations of central organs, to toxic agents in the blood, to auto-intoxications, to cachectic and diathetic conditions, to cardiac lesions and to a great variety of intercurrent causes. These abnormal pulse-tracings varied much in different kinds of insanity and in different individuals suffering from the same form of disorder, and they were best classified according to the actual physical status of the patient and the etiology and stage of the mental disorder. No one sphygmogram was pathognomonic of any particular form of insanity, but there were certain general types of tracings which were found in one form of mental disease and not in another. Sphygmographic studies to be of special value should be continued in the same patients throughout an attack of mental disorder, and tracings finally obtained in convalescence should be preserved for comparison. Unfortunately, studies with the sphygmograph were laborious and time consuming, but they were of such diagnostic and prognostic value in mental disorders that they had already become an indispensable part of the alienistic science.

Dr. C. K. Mills, of Philadelphia, read a pader on

THE LOCALIZATION OF LESIONS IN THE PONS.

He first presented the record of a case, with autopsy and drawings of microscopical sections. This patient was a man fifty-three years old with a syphilitic history. His intracranial symptoms came on about eight months before his death, the first being paralysis of the left abducens nerve. He had attacks of weakness and dizziness. He showed on examination paresis of the left leg and arm, paralysis of the left external rectus, paresis of the right external rectus with some restriction of ocular movements to the left. The patient was extremely emotional. No areas of anesthesia discovered. Knee-jerks exaggerated on left side. Examination of the pons and pre-oblongata revealed a lesion by a cut fifteen millimetres carried to the junction of the pons and crus. It was close to the median line, almost entirely in the dorsal half of the pons. Its width in the first state was five millimetres; dorso-ventrally its dimension was about eight millimetres. Sections through the lesion showed an area of degeneration much larger than that revealed when the specimen was fresh. Softened and degenerated tissue was found on both sides of the median line, much more marked on the left. As shown by the microscopical examination, the parts involved in the lesion were the right mesial fillet and pyramidal tracts to a slight degree, and the root fibres of the abducens. In connection with this case remarks were made on the method of localizing small gross lesions in the pons. This method was founded upon a number of cases most of which had been published. He divided each half of the pons and pre-oblongata into nine segments, three ventral, three dorsal and three intermediate between the ventral and dorsal. Drawings were shown which were based upon actual sections of specimens. The parts played by the cranial nerves, by the superficial and deep transverse fibres, by the pyramidal tract, the fillet, the various systems of root fibres and the nuclei of the cranial nerves and the special frontal nuclei in this method of local diagnosis were shown.

To be continued.)

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Recent Literature.

Lectures on Surgery. By David W. Cheever, A.B., M.D. (Harv.), Professor of Surgery, Emeritus, in the Medical School of Harvard University; Senior Surgeon of the Boston City Hospital; Fellow of the American Surgical Association, etc.; 600 pages. Boston: Damrell & Upham. 1894.

To those whose privilege it has been during the past thirty years to receive instruction from its distinguished author this volume will be read with great interest and satisfaction. It will also be found in the medical libraries of many others. It is compiled from the stenographic reports of lectures given to form a part of a course of instruction in surgery at the Harvard Medical School, which includes many other instructors and special departments. It gives the lectures as delivered, unaltered except verbal corrections in revision. They are well known to the medical public since they have recently been separately published in the *Boston Medical and Surgical Journal.* It is with much satisfaction that its readers find them at their disposal in book-form.

Concerning the character of the work and the correctness of the statements which appear on its pages, one has only to know the name of the author to be satisfied. One recognizes at once the concise, accurate, vivid picture — an effect produced by words alone, a characteristic rarely found developed to such a degree even among noted teachers. It is a book especially adapted to the student, since its author is one of the few surgeons who were pre-eminent in the best part of the preaseptic era, and who still keep pace with the development of modern surgery and its methods. The results of his enormous experience during this long period are epitomized in these lectures.

Aside from its value to the general medical public, this book has an additional intrinsic value to many of its readers. It is a memento to the members of those numerous classes who have during the past thirty years been so fortunate as to have heard these lectures from the teacher himself — to have personally met and known him. To them these pages will be alive with the character and rare personal qualities of the man.

THE BOSTON
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PROFESSOR LOUIS PASTEUR.

IN the death of Louis Pasteur the world must recognize the loss of one of the most distinguished scientific men of the century. His death, following so closely upon that of Tyndale and Helmholtz and Huxley, leaves the end of our century comparatively poor in the exponents of notable original research. Virchow is approaching his seventy-fifth year, and it is hardly to be expected that he will add materially to the monumental work he has already achieved, though it is earnestly to be hoped that he may lend the weight of his mature judgment to the pressing scientific questions of the time for many years to come. The opening of another century must look to a younger band of workers to carry on the investigations originated by these master minds. No doubt such will be found, but that makes us feel none the less the loss of another of the distinguished company which has made this century the most notable in the history of scientific advance.

Like many men who have later in life attained positions of distinction, Pasteur was of extremely humble parentage, and gained his early education under the stress of poverty. He was born at Dole, in the Department of the Jura, December 27, 1822. He became at eighteen a member of the university, in the difficult situation — corresponding to that of a sizar in England — of a supernumerary master of studies at the College of Besançon. At twenty-one he was admitted as a pupil to the normal school. He was a graduate in the physical sciences in September, 1846, but he remained at the school two years longer as an assistant instructor in chemistry, obtained a doctor's degree and received the appointment of professor of physics at the Lycée of Dijon. Then his long years of comparative poverty came to an end.

At an early age it was evident wherein his genius lay, and shortly after his graduation at the École Normale, and his attainment of the doctor's degree, he was appointed professor of physics at Strassburg. This was in 1848, in his twenty-sixth year. Later, in 1854, he became dean of the newly-created Faculty of Sciences at Lille, and in 1857 returned to Paris to undertake the scientific direction of the Normal School.

From this time on honors crowded upon him. He became a member of the Legion of Honor in the year 1853, received the Rumford medal of the Royal Society of London in 1856, a reward of 10,000 florins from the Austrian Ministry of Agriculture and the rank of Commander of the Legion of Honor from the French Emperor in 1868, a degree appointing him a senator in 1870, a premium of 12,000 francs from the French Société d'Encouragement in 1873, the Copley medal from England, and an annuity of 12,000 francs from the Assemblée Nationale in 1874, the rank of Grand Officer of the Legion of Honor in 1878, election as a member of the Académie Française, to succeed Littré, and the Albert medal of the Society of Arts in 1882, and the magnificent laboratories of the Pasteur Institute in Paris, built by popular subscription and a liberal contribution from the Czar of Russia. Roty, the excellent medallist, produced in 1892 a commemorative medal of him.

In 1863 he published his work whose consequences have been so far reaching, entitled "A New Example of Fermentation, showing that the Animalcula Infusoria is able to exist without Free Oxygen." It is hard for us now to realize how revolutionary were the ideas advanced regarding the fermentative processes and how bitterly they were attacked. The array of data, however, which Pasteur had to offer made their acceptance merely a matter of time and his position in the scientific world was once for all established.

His subsequent work, of which his researches on fermentation were the key-note, are so familiar as to require only a passing mention. His investigations into the disease which in the later seventies threatened to destroy the wine-growing industry of his country, his discovery of the cause of the silk-worm disease, and his patient researches into the cause and cure of hydrophobia, might each have been a life-work for a man of less breadth and industry. Vastly important as each of these has been in the industrial and medical history of the century, we must attach even more significance to his clear insight into the genesis of the various infectious diseases and to the rational and largely successful methods taken, in consequence, to check their inroads. We do not generally realize that to Pasteur we owe our modern aseptic and antiseptic surgery. The so-called "triumphs of modern surgery" are almost wholly dependent upon the painstaking researches of this truly-profound scientific student. An application of the facts, which he had so laboriously gleaned, was Lister's minor work.

In many respects Pasteur may be aptly compared with Darwin. Both had to an eminent degree the two prerequisites of a scientific mind: first, the industry necessary to collect facts; and, secondly, the much rarer power of just generalization from the facts obtained. The union of these two attributes both possessed. When Darwin's revolutionary hypothesis of the "Survival of the Fittest" was given to the world, the inevitable antagonism which it aroused was met by an incontrovertible appeal to the facts which he had spent his life in collecting. When Pasteur's theory of fermentation was first enunciated it was likewise vigorously attacked, but also received its verification in the vast amount of experimental data which its author had to offer.

Apart from all other qualities, it was peculiarly this that made both of these men eminent in their quite different fields — that their industry was of that patient sort which published no result, until that result was fortified by a wreath of carefully observed facts. Premature generalization is hardly less fatal than none at all.

Remarkable especially about Pasteur's work was its eminently utilitarian character. It is one of those rare instances in which research pursued for its own sake, in the quiet of a scientific workshop, has led to untold practical benefit to the world at large. To those who are inclined to scoff at the utility of scientific investigation we have but to point to this work as an example of what may be, and in fact, must be accomplished by the student, and by him alone, in the development of civilization in all its phases.

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THE DANGERS OF MURPHY'S BUTTON.

A COMPILATION recently published[1] of several cases where the intestine was united by the Murphy button gives interesting data as to the practical effect of this appliance. In one case where death occurred with symptoms of obstruction, the opening of the button was plugged with hardened feces. In another, the button was removed by a second operation from the *proximal* side of the anastomosis. Again, death occurred from intestinal gangrene at the site of the button, possibly from the manner in which it was applied (too close approximation of the edges) or its extreme size and weight. In another case the button was found on the proximal side of the end-to-end resection at the autopsy. In two cases of gastro-enterostomy the button was found after death in the stomach — one patient living ten days, the other two to three months. It is evident from the above that the danger of retention of the button is a real one, notwithstanding the successful cases reported. Its principal claim is that it can be applied rapidly, which is true. This will restrict its use to those cases where the most rapid operation possible is indicated, where speed is required at all hazard, and other risks must be ignored on account of the limited time at the disposal of the operator on account of the condition of the patient. The button itself is an appliance which should be properly made, and the technique of its application thoroughly understood.

There can be little question that the use of the larger Murphy button is, in the hands of most operators, safer than anastomosis by suture in cases where the condition of the patient renders haste necessary. But, on the other hand, it is for just this class of cases that the anastomosis by absorbable plates — the bone plates of Senn, or the vegetable plates advocated by Dawbarn — have been devised. Anastomosis by these plates takes very little more time than by the Murphy button, and has the advantages of providing a free opening, and of being free from the danger of remaining on the proximal side of the anastomosis as a foreign body in the stomach or intestine. Again, the danger of producing pressure gangrene of the apposed edges is greater in a mechanical appliance of the size and weight of the button, and its unyielding metallic catch will allow no relaxation of its grip if once too firmly made.

Over the lateral or end-to-end anastomosis by suture alone, the plates have the advantage of greater ease and rapidity of application, a fact which renders their use the method chosen in the majority of cases which fall into the hands of the average surgeon.

To recapitulate, then, although we must admit that when the patient is capable of sustaining a long operation and the surgeon possesses exceptional skill in dealing with these cases, anastomosis by suture is the ideal method, for the majority of cases, in the hands of the average surgeon, Senn's plates are to be preferred.

The use of the Murphy button has been shown to possess inherent disadvantages which should restrict its use to those cases in which it is necessary to hasten in order that the patient may survive the shock of the operation.

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MEDICAL NOTES.

THE CHOLERA IN RUSSIA. — In the province of Volhynia, Russia, during the week ending August 24th, 5,849 cases of cholera were reported, and 2,184 deaths therefrom. In the province of Podolin, for the ten days ending August 31st, 101 cases of cholera and 45 deaths were reported.

DR. LAUDER BRUNTON. — This distinguished physician has been recently promoted to be full Physician at the St. Bartholomew's Hospital.

INEBRIETY AND INSANITY. — The large part played by alcohol as a cause contributing to insanity receives fresh confirmation in the fortieth report of the British Commissioners in Lunacy. For the five years ending 1893, alcoholism was the predisposing or exciting cause in 20.8 per cent. of male and 8.1 per cent. of female lunacy. Intemperance is credited with 25.6 per cent. of male and 19.9 per cent. of female general paralytics.

THE TUBERCULIN TEST FOR BOVINE TUBERCULOSIS. — The United States Veterinarian Association, at its recent convention in Des Moines, Ia., has adopted a resolution sanctioning the tuberculin test as the only reliable means now known for the detection of tuberculosis in obscure cases, and declaring that a physical examination of animals to determine the existence of tuberculosis is unwise, deceitful and unwarrantable. This action is in marked contrast with that of the Massachusetts Legislature in repealing the law which made the tuberculin test compulsory in cases of suspected bovine tuberculosis, and thus destroying the only known safeguard against the invasion of our milk and food supply by tuberculosis. In Minnesota and other Western States the dairymen are obliged to show a clean bill of health for their cattle, signed by an inspector who employs the tuberculin test. It is to be hoped that further legislation in Massachusetts with regard to this vital question will not be prevented by the political influence of farmers who are unwilling to sell the State, at half the value of healthy animals, cattle whose products they have no moral right to sell at all, and that at the next session of the legislature the backward step taken last spring may be retrieved.

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[1] Dawbarn: Annals of Surgery, 1895, vol. xxi, 166.

SUBSCRIPTIONS TO THE "INDEX MEDICUS." — The following additional subscriptions to the *Index Medicus* were received by Dr. J. S. Billings, from September 7th to the 24th, making the whole number of subscriptions to the latter date 105:

Albany, N. Y.: Dr. Henry Hun.
Alhambra, Cal.: Dr. Milbank Johnson.
Ann Arbor, Mich.: Medical Department, University of Michigan.
Baltimore, Md.: Dr. Thomas S. Cullen.
Boston, Mass.: Dr. J. W. Elliot, Dr. R. H. Fitz, Dr. M. H. Richardson.
Cleveland, O.: Dr. Wm. H. Humiston.
Colorado Springs, Col.: El Paso County Medical Society.
London, Eng.: British Medical Association.
Louisville, Ky.: Index Medicus Club.
Nashville, Tenn.: Dr. J. H. Mills.
New York City: Dr. Robert Abbe, Dr. S. T. Armstrong, Dr. L. Duncan Bulkley, Dr. D. Bryson Delavan, Dr. Alexander Lambert, Dr. Robert F. Morris, Dr. Frederick Peterson, Dr. R. W. Taylor, Dr. W. Gilman Thompson, Dr. T. H. Wiggin.
Philadelphia, Pa.: Dr. John W. Crowskey, Dr. Howard F. Hansell, Dr. John H. Packard.
Syracuse, N. Y.: Dr. Henry L. Elsner, Syracuse Academy of Medicine.

DURATION OF LIFE AFTER THE DEVELOPMENT OF ALBUMINURIC RETINITIS. — Possauer, in a thesis, presented at Zürich, in 1894, has shown by an analysis of seventy-two cases occurring both in hospital and private practice, that the prognosis is not quite so unfavorable as previous statistics would indicate. Among the private cases, somewhat more than one-half died within the two years ordinarily given as the limit; in the hospital cases the proportion was greater. Good care and hygienic surroundings seemed to make a noticeable difference, and duration of life was greater in women than men. In only one case (a woman) was the duration more than six years, and here nothing is said as to the albuminuria being a possible complication of pregnancy. When this is the case it is well known that the prognosis is much more favorable. — *Brooklyn Medical Journal.*

RETIREMENT OF DR. GIHON. — Dr. Albert Leary Gihon, Medical Director of the United States Navy, having reached the age of sixty-two years, was retired from the service on September 28, 1895, after a service of more than forty years, eleven of which were spent at sea and more than twenty-seven on shore. He retires with the rank of commodore (brigadier-general). Dr. Gihon was graduated from the Philadelphia College of Medicine and Surgery in 1852, and was professor of chemistry and toxicology in that institution in 1853-54. He entered the navy in 1855 as assistant surgeon, becoming successively passed assistant surgeon in May, 1860; surgeon in August, 1861; medical inspector in November, 1872; and medical director in August, 1879. He has represented the medical department of the navy in many important scientific bodies, in a considerable number of which he has been honored with some official position. He has made numerous contributions to medical literature, the latest of which is a series of articles in the *Twentieth-Century Practice of Medicine.*

ENTHUSIASM CARRIED TOO FAR.— An example of carrying the courage of one's opinions too far is afforded by Mr. Hanbury Hanlan, who, as reported in the *Medical Press and Circular*, has been doing good work in the cholera-stricken districts of India. "From published accounts we learn that he placed a quantity of permanganate of potassium in an infected well not far from his residence in Agra. Then, in order to prove to the natives that his 'red medicine' had made the water harmless he drank a glassful, and two days later he was down with the cholera. This kind of temerity defeats its own object. The untoward result of this experiment would only confirm the natives in their preconceived notions of fatalism. We learn, however, that Mr. Hanlan was the only person in the village who recovered."

EXTRAORDINARY CONTENTS OF A HERNIAL SAC. — At the Middlesex Hospital Mr. Leopold Hudson recently operated upon a case of right inguinal hernia in a female infant, nine months old, in which the hernial sac was found to contain the uterus, both Fallopian tubes and ovaries and a knuckle of intestine. The following account of the case is taken from the *Medical Press and Circular:* "No flatus or motion had been passed for three days prior to the operation, and there had been vomiting during that time. Immediately after admission, however, the child passed a motion, but as the swelling in the right inguinal region was still very large, and remained very tense, it was decided to cut down upon it. Mr. Hudson opened the sac, and immediately a small piece of gut slipped back, but there remained in the sac both Fallopian tubes, both ovaries, together with the uterus. The tubes were much congested from being constricted at the neck of the sac; a director was passed in, the constriction divided, and the contents returned, first the left ovary and tube, then the uterus, and lastly the right appendages. The attachment of the right broad ligament to the pelvic brim had been so drawn forwards and upwards that it formed part of the outer wall of the sac at its neck. The sac was transfixed just above this point, and a probe being passed along the urethra to define the position of the bladder (which was discovered to be in its normal position), the fundus of the sac was excised, the stump being fixed between the pillars of the ring, which were then sutured together." This condition of things must be admitted to be one of extreme rarity, if not unique.

NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, October 2, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 99, scarlet fever 28, measles 8, typhoid fever 63.

A NEW PATHOLOGICAL BUILDING.— The Massachusetts General Hospital is to have a new pathological building. It will be three stories in height, and will be 99 feet long and 25 feet wide. On the first floor will be the animal rooms and the carpenter shop, and the second will contain the chemical and biological laboratories and examination rooms. More examination rooms and the histological and pathological laboratories are to occupy the third floor. The cost will be about $22,000.

THE NEW MCLEAN BUILDINGS AT WAVERLEY. — A very large number of physicians and others interested in charitable institutions availed themselves of the invitation on the part of the trustees of the Massachusetts Hospital and McLean Hospital to visit the new buildings of the latter at Waverley. Those who accepted the invitation were fortunate in the opportunity to inspect the buildings, which situated on the commanding summit of the Waverley hills combine in the highest degree advantages of situation, architectural beauty, and fitness for the purpose for which they are intended. The spacious colonial houses give the place more of the appearance of a colony of homes than of an institution, and the centrally situated administration building is provided with all modern facilities for communication with and control of the others, and there is a well-appointed gymnasium for the physical culture of the patients. Mention should also be made of the laboratory, equipped with every facility for carrying on the researches in psychology and pathology for which the institution affords such exceptional advantages; but to this, as to the whole subject, we are unable in the space at our command to do justice. The institution must be visited in order that its perfection in conception and detail may be appreciated, and such a visit will more than reward those who are wise enough to take the trouble to make it.

NEW YORK.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK. — The first meeting of the Medical Society of the County of New York after the summer vacation was held on September 23d. The following officers were nominated, to be voted for at the October meeting: President, Drs. Edward D. Fisher and Richard Van Santvoord; First Vice-President, Drs. Wendel C. Philips and Frederick G. Peterson; Second Vice-President, Dr. G. Henry Fruitnight. The present Secretary, Assistant Secretary and Treasurer were renominated. Dr. Frank Van Fleet, who has taken a prominent part in the efforts being made to prevent opticians from prescribing glasses to those applying to them without an oculist's orders, appealed from a decision of the Comitia Minora (Executive Committee of the Society), refusing to defend him in a suit for $40,000 damages brought against him by an optician who advertised in the Medical Directory published under the auspices of the Society. The matter elicited a lively discussion by the members, but no definite action was taken. Dr. Van Fleet had contended that the insertion of the advertisement was contrary to the ethics of the profession, and as his strictures were made at a meeting of the Society, he claimed that the latter should uphold him in his suit.

QUARANTINE OF THE NEW YORK JUVENILE ASYLUM.— The New York Juvenile Asylum, a very large institution in the vicinity of High Bridge, has been quarantined for the past few weeks on account of an outbreak of diphtheria. In two months about fifty cases have occurred, and no new inmates have been admitted or any discharges made. During the epidemic twenty-five patients were transferred to the Willard Parker Hospital for Contagious Diseases of Children. The number of cases having been reduced to three, the General Superintendent and Asylum Physician Alfred M. Spalding applied to Dr. Benedict, Chief of the Bureau of Contagious Diseases, to have the quarantine of the institution raised, but this has been refused by Dr. Benedict, who claims that it should continue until the disease has been entirely stamped out.

GLANDERS IN A LIVERY STABLE.— On September 23d President Wilson ordered the shooting of five horses found to be suffering from glanders in a livery stable in West 75th Street. The owner was allowed $50 compensation for each animal.

THE LAW ENFORCED.— During the past week two milk dealers have been sentenced to the penitentiary for a month each, in addition to paying fines of $300 for watering milk and treating it with boric acid to prevent it from souring.

THE TETANUS ANTITOXIN.— A case of recovery from tetanus under the use of tetanus antitoxin is reported from Plainfield, New Jersey. The disease resulted from an injury to the head by a fall from a hammock, and at the time the antitoxin was resorted to the case was thought to be hopeless. The patient is now said to be entirely well.

AN ONE HUNDRED AND THIRD BIRTHDAY CELEBRATED. — Joseph Field, familiarly known in the neighborhood as "old Uncle Josey," celebrated his one hundred and third birthday on September 26th, at Middleton, Monmouth County, New Jersey. He is of English parentage, and records are extant which prove that he was born at Monmouth, N. J., on September 26th, 1792. The old man states that he drank Jersey apple-jack for eighty-two years, but about a year ago he changed off to brandy.

Death of Dr. Edward W. Burnette.—Dr. Edward W. Burnette, a well-known practitioner, died of cancer of the face on September 22d. The disease appeared about eighteen months ago, and last spring an operation was performed upon him by Dr. Charles McBurney, who removed a portion of the superior maxillary bone. The case of Dr. Burnette has given rise to considerable discussion as to the possible inoculability of cancer, as the disease appeared on the site of a cut on the cheek made while shaving after examining and locally treating a case of cancer of the tongue in a female patient. His attending physician, Dr. Roland E. Jones, is convinced that Dr. Burnette contracted the disease by inoculation by means of his fingers. He made a careful autopsy, assisted by Dr. B. Farquhar Curtis, and is preparing a detailed history of the case for publication in the medical journals. Dr. Burnette was about fifty years of age, and unmarried. He was graduated from Bellevue Hospital Medical College, and afterwards served as interne at Bellevue Hospital. He then spent some time on the staff of the New York City Asylum for the Insane on Blackwell's Island, and since then has been in active private practice. In discussing the death of Dr. Burnette editorially, the *New York Medical Record* remarks: "The melancholy case in point was undoubtedly one of predisposition to malignant disease, that developed in due time, the supposed inoculation from a cancerous patient having no more causative relation to it than any other purely coincidental circumstance."

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Miscellany.

THE INSPECTION OF MILCH COWS IN ROME.

The Correspondent of the *British Medical Journal*, in a letter published in the number of July 20th, gives a brief statement of the excellent regulations which have been for some time in force in Rome in relation to the health of milch cows and other animals which supply milk to the residents. The "Eternal City" furnishes an example in this report which is worthy of imitation by younger and, according to common belief, more progressive cities. These regulations are in effect as follows:

"All milch cows and other animals which supply milk in the suburbs and Agro Romano will be subjected to a rigorous examination by the municipal veterinary surgeons. To this purpose notice of every animal introduced into the Commune must be given to the health authorities before the milk can be sold, and it is then placed under the inspection of the veterinary surgeon. When the animal is healthy and capable of furnishing good milk, it will be marked in the horn, and a special license will be given to the owner. These animals will be inspected every year, in the months of April, May and June, and also on any other occasion that the authorities may deem necessary. The cows suspected of tuberculosis will be treated with tuberculin at the expense of the owners, and those diseased will be slaughtered. The extension of these regulations to the whole Commune is a great boon to the inhabitants, as now all the cows which supply milk to the city will be under inspection, and this will prevent the owners in Rome proper sending tuberculous cows into the Campagna, where they might continue to supply milk. The milk coming from the Campagna will be preferable, as it will be obtained from cows kept in the fields."

◆

A SUBSTANTIATION OF THE WATER-BORNE THEORY OF CHOLERA.

During 1894 it will be remembered that there was a serious outbreak of cholera in the East Lancashire Regiment of the British Army, stationed at Lucknow. The manner of its origin was a mystery, which for a long time could not be cleared up. In Mr. Hankin's report to the British Government for the year 1894, is an interesting account of the outbreak and the manner in which its origin was detected; which we abstract from the *British Medical Journal* of August 31, 1895.

"Out of a total of 646 officers and men there were 145 attacks, of which 93 terminated fatally. As Mr. Hankin says, 'A few years ago this outbreak would without doubt have been quoted as a conspicuous proof of the view that cholera is a disease of locality, or that it is caused by a "miasma." It would further have been cited as a conspicuous illustration of the incapacity of the "water-borne theory" of cholera to explain the facts connected with the distribution of the disease in India. Although all the companies were living under exactly the same conditions of life, and their supplies of water and food were identical, so far as could be seen, the disease showed the strangest preference to particular bodies of men, while certain barracks nearly or completely escaped the disease. Some companies furnished cases daily throughout the epidemic; others had but single cases, both while in barracks and while in the preparatory camp, but on their arrival in the Kokrail Cholera Camp the disease broke out among them as severely as in the rest of the companies. The disease appeared suddenly in the station hospital at the same time that the rest of the regiment was suffering so severely, although, so far as I know, there was nothing in common as regards water-supply or diet between the patients in hospital and the men on duty in the regiment. The disease showed a preference for certain wards of the hospital, while others remained perfectly unaffected. In short, the outbreak showed every character that has on other occasions been quoted as proof of the inexplicability of cholera, and it is so referred to in the Government Blue Books.'

"Now what is the explanation which was the result of a most careful inquiry on the part of Mr. Hankin and his colleagues? The East Lancashire Regiment consisted of companies A, C, E, F, G, H. When the cholera broke out in the cantonments the regiment was transferred to the Kokrail Cholera Camp. Throughout the epidemic the E company remained immune from attack, though the conditions of life were identical with those of other companies and their barracks were almost surrounded by those of companies who suffered severely from cholera. To again quote the dramatic statement of Mr. Hankin: 'On cross examining the color-sergeant of this company the mystery at first seemed to deepen, for he roundly asserted that the men of his company had exactly the same supplies of food and water as the men of other companies. But on his being pressed as to how he knew that the water-supply was the same as that of other companies he replied that he "ought to know, if anybody, as *he boiled it himself!*" It is needless to say that on making inquiries we found that this sanitary precaution had not been taken by the color-sergeants of other companies.'

"By this simple sanitary expedient of boiling the drinking-water, the E company was completely protected from cholera. This is not, however, a solitary instance. Mr. Hankin gives another equally striking. When cholera was raging at Lucknow, and had attacked the cantonments, the 16th Lancers remained immune, and on inquiry into the cause it was found that nine months previously Mr. Hankin had sent a report to the regimental authorities strongly condemning their filter-tank well, in consequence of which report the drinking-water used by the men had since always been boiled. These striking cases explained the assumed 'vagaries' of cholera, and gave the clue to further inquiries."

◆

A NEW APPLICATION OF HOMEOPATHY.[1]

THE taste for literature in homeopathic doses seems to be growing. If this thing keeps on, the time may come when knowledge will be put up like pills or wafers or tablets. And a great convenience it would be to the busy sons of American toil. If one wished to prepare an article on some historical subject, for instance, he could buy a box of Motley's American Pills or Gibbon's Roman Tablets, and take one after another until the requisite amount of historical information were absorbed. It would also be pleasant, if a gentle titillation of the literary senses were desired, to buy a few Richard Harding Davis wafers and lie down to delightful dreams. Or in case one's conscience became unusually obstreperous, he could take Biblical Tabules till his system was soaked with sanctity. If one's pessimism were temporarily upmost, he could find plenty of Nordau's Pillules to help him enjoy his misery while the fit lasted. It's a great scheme. Methinks the dim, distant future holds a publisher's announcement similar to this:

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New Orleans Pickatune.— "The pills lead gently and pleasantly up to the final mystery when the Fit clears everything up in a very sensational manner. More such pills would have a highly beneficial effect upon modern literature."

---

[1] The Philistine.

Correspondence.

THE RUSH MONUMENT FUND.

BALTIMORE, September 23, 1895.

MR. EDITOR: — The sum total of the Rush Monument Fund to date amounts to $3,357.39. Among the recent contributions are the following:

Prof. Nicholas Senn, Chicago.	$100.00
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Dr. W. H. Marsh, Solomons, Md.	1.00

Further subscriptions will be acknowledged in these columns.

Very truly yours,

GEORGE H. ROHÉ,

Secretary and Treasurer, Rush Monument Committee.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 21, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,704,506	768	367	23.79	12.74	15.99	2.21	2.08
Chicago	1,227,382	517	258	39.80	8.80	26.60	5.80	6.00
Philadelphia	1,163,864	366	151	17.55	10.80	7.29	2.97	5.13
Brooklyn	1,100,000	416	191	25.18	10.08	16.56	1.20	6.00
St. Louis	560,000	—	—	—	—	—	—	—
Boston	494,205	228	89	30.36	11.88	11.44	3.96	5.28
Baltimore	496,315	165	80	27.45	9.76	18.30	2.44	4.27
Cincinnati	333,970	101	40	16.00	9.09	11.00	1.00	1.00
Cleveland	325,000	122	59	29.52	10.66	21.32	7.38	—
Washington	285,000	113	33	22.00	13.20	10.56	11.44	—
Pittsburg	272,000	—	—	—	—	—	—	—
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	34	9	23.52	23.52	17.64	5.88	—
Charleston	65,165	—	—	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	98,687	37	14	21.60	2.70	16.20	2.70	—
Fall River	88,020	38	22	42.08	7.89	39.45	—	—
Lowell	84,359	34	19	38.22	8.82	32.34	2.94	2.94
Cambridge	81,519	29	18	41.40	13.80	51.05	—	10.35
Lynn	62,355	23	8	21.75	8.70	13.05	—	8.70
New Bedford	55,254	20	8	20.00	5.00	15.00	5.00	—
Springfield	51,534	10	4	40.00	10.00	10.00	—	20.00
Lawrence	52,153	—	—	—	—	—	—	—
Holyoke	40,149	—	—	—	—	—	—	—
Salem	34,437	9	2	—	—	—	—	—
Brockton	33,157	7	2	28.56	—	14.28	—	14.28
Haverhill	30,185	8	5	—	—	—	—	—
Malden	29,706	11	7	18.18	9.09	—	—	—
Chelsea	31,295	16	6	6.25	12.50	—	—	6.25
Fitchburg	26,394	13	8	30.76	7.69	15.38	7.69	7.69
Newton	27,622	7	5	42.84	—	42.84	—	—
Gloucester	27,663	—	—	—	—	—	—	—
Taunton	27,093	9	2	—	—	—	—	—
Waltham	20,877	4	0	25.00	—	—	25.00	—
Quincy	20,712	8	4	12.50	25.00	12.50	—	—
Pittsfield	20,447	3	2	—	66.66	—	—	—
Everett	18,578	—	—	—	—	—	—	—
Northampton	16,738	5	2	—	—	—	—	—
Newburyport	14,554	9	4	11.11	22.22	—	—	—
Amesbury	10,920	—	—	—	—	—	—	—

Deaths reported 3,217; under five years of age 1,437; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 770, consumption 355, acute lung diseases 192, diarrheal diseases 473, diphtheria and croup 124, typhoid fever 106, whooping-cough 34, malarial fever 9, scarlet fever 8, cerebro-spinal meningitis 7, measles 6.

From whooping-cough New York 13, Philadelphia 6, Chicago 4, Providence 3, Brooklyn and Baltimore 2 each, Cincinnati, Cleveland, Worcester and Malden 1 each. From malarial fever Brooklyn 6, New York 2, Baltimore 1. From scarlet fever Chicago 2, New York, Philadelphia, Baltimore, Boston, Springfield and Newburyport 1 each. From cerebro-spinal meningitis

New York 3, Cincinnati 2, Philadelphia and Malden 1 each. From measles New York 5, Chicago 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530, for the week ending September 14th, the death-rate was 19.3. Deaths reported, 3,917; acute diseases of the respiratory organs (London) 122, diarrhea 706, diphtheria 75, whooping-cough 60, fever 58, measles 49, scarlet fever 40, small-pox (London 2, Manchester 1) 3.

The death-rates ranged from 11.7 in Plymouth to 37.5 in Sunderland: Birmingham 19.8, Bolton 28.4, Croydon 13.6, Hull 30.8, Leeds, 20.4, Leicester 16.9, Liverpool 26.6, London 15.4, Manchester 30.0, Newcastle-on-Tyne 22.2, Norwich 13.1, Nottingham 13.6, Oldham 24.4, Sheffield 22.2.

METEOROLOGICAL RECORD,

For the week ending September 21st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:–

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..15	30.36	50	58	42	53	55	54	N.	S.	10	8	C.	C.	
M..16	30.16	56	64	47	64	69	67	S.W.	S.W.	12	11	O.	O.	
T ..17	29.88	70	80	59	75	74	74	W.	W.	12	12	C.	C.	
W..18	29.82	56	59	54	63	91	77	N.	N.E.	3	6	R.	O.	.07
T ..19	30.00	58	62	53	75	86	80	N.	S.	8	8	O.	C.	
F..20	30.10	70	83	58	85	84	84	W.	E.	12	9	F.	C.	
S...21	30.01	77	94	60	86	58	72	N.	W.	2	11	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 21, 1895, TO SEPTEMBER 27, 1895.

A board of medical officers to consist of **Colonel Charles H. Alden**, assistant surgeon-general; **Lieut.-Col. William H. Forwood**, deputy surgeon-general; **Lieut.-Col. David L. Huntington**, deputy surgeon-general; **Major Charles Smart**, surgeon; **Major Walter Reed**, surgeon, is constituted to meet at the Army Medical Museum Building in this city on Tuesday, October 1, 1895, at 10 o'clock A. M., for the examination of candidates for admission to the medical corps of the Army.

Major Henry Lippincott, surgeon, is relieved from duty at Fort Adams, R. I., and ordered to Fort Sheridan, Ill., for duty, relieving **Major Alfred C. Girard**, surgeon.

Major Girard, on being thus relieved, is ordered to Fort Douglas, Utah, for duty, relieving **Major Charles L. Heizmann**, surgeon.

Major Heizmann, on being thus relieved, is ordered to Fort Adams, R. I., for duty.

Captain Richard W. Johnson, assistant surgeon, will be relieved from duty at Fort Huachuca, Arizona, upon the arrival there of **Captain William J. Wakeman**, assistant surgeon, and ordered to Fort Logan, Colorado, for duty.

Leave of absence for one month, to take effect about the 5th proximo, is granted **Major Joseph B. Girard**, surgeon, Presidio of San Francisco, Cal.

Major James C. Worthington, surgeon, is granted leave of absence for three months on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 28, 1895.

D. Dickinson, surgeon, detached from the "Minneapolis" and ordered to examination for promotion.

D. N. Bertolette, surgeon, detached from the "Atlanta" to duty on the "Minneapolis."

RECENT DEATHS.

Joseph W. Hastings, M.D., M.M.S.S., the oldest physician in Warren, died Monday, September 23d. Dr. Hastings was born in Lenox, February 19, 1834. He studied medicine at Harvard and graduated in 1856. He went at once to Monson Almshouse as State physician, where he remained until 1858, when he went to Warren, where he has since lived. In 1861 he enlisted as assistant surgeon in the Twenty-first Massachusetts Regiment, and was promoted in 1863 to the rank of surgeon in the Twenty-third Massachusetts, and later, accompanied Sherman in his march to the sea as brigade surgeon. When the war ended Dr. Hastings resumed his practice in Warren. He was a member of the Massachusetts Medical Society and one of the councillors of the Society at the time of his death. He was a member of the Grand Army, of the Masons and the Royal Arcanum. In 1884 he was a representative in the legislature, and by his perseverence, although in the minority on the committee, successfully carried the measure for pure food. In 1889 Governor Russell appointed him to the position on the State Board of Health left vacant by Senator Hoar, and he was reappointed by Governor Greenhalge for the term of seven years. Dr. Hastings held many town offices. He was on the school board for a long term of years, a member of the Board of Health, president of the Rural Improvement Society, was a vice-president of the Quaboag Historical Society, a member of the Board of Trade and other local organizations. As a physician and surgeon Dr. Hastings was possessed of excellent judgment and much resource, tact and skill. He was unselfish, genial and companionable; in all relations, upright, loyal and true; a man of fine characteristics, an able physician, a broad-minded and patriotic citizen.

M. Louis Pasteur, died at Villeneuve, on the morning of September 28th.

Prof. Adolphe von Bardeleben, professor of surgery in the University of Berlin, died in that city September 24th, aged seventy-six years.

BOOKS AND PAMPHLETS RECEIVED.

Flooding the Urinary Tract. By B. H. Daggett, M.D., Buffalo, N. Y. Reprint. 1895.

Perforation in Enteric Fever; Its Surgical Treatment. By Frederick Holme Wiggin, M.D. Reprint. 1895.

Transactions of the Medical Society of the State of New York for the year 1895. Published by the Society. 1895.

The Practice of Massage: Its Physiological Effects and Therapeutic Uses. By A. Symons Eccles, M.B., Aberd.; Member Royal College of Surgeons, England; Fellow Royal Medical and Chirurgical Society, London; Member Neurological Society, London, etc. London: Macmillan & Co. 1895.

Lectures on Appendicitis and Notes on Other Subjects. By Robert T. Morris, A.M., M.D., Fellow of the New York Academy of Medicine, American Association of Obstetricians and Gynecologists, American Medical Association; Member of the New York State and County Medical Societies, etc. With illustrations by Henry McDonald, M.D. New York: G. P. Putnam's Sons. 1895.

Personal Reminiscences and Recollections of Forty-six Years' Membership in the Medical Society of the District of Columbia, and Residence in this City, with Biographical Sketches of Many of the Deceased Members. By Samuel C. Busey, M.D., LL.D., President of the Medical Society of the District of Columbia, 1877, 1894 and 1895, Washington City, D. C. Washington, D. C. 1895.

A Text-Book of Practical Therapeutics; with Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With special chapters by Drs. G. E. de Schweinitz, Edward Martin and Barton C. Hirst. Philadelphia: Lea Brothers & Co. 1895.

A Manual of Obstetrics. By F. A. King, A.M., M.D., Professor of Obstetrics and Diseases of Women in the Medical Department of Columbian University, Washington, D. C., and in the University of Vermont; late President of the Washington Obstetrical and Gynecological Society; Fellow of the British and American Gynecological Societies, etc. Sixth edition with 221 illustrations. Philadelphia: Lea Brothers & Co. 1895.

Physical and Natural Therapeutics; The Remedial Use of Heat, Electricity, Modifications of Atmospheric Pressure, Climates and Mineral Waters. By Georges Hayem, M.D., Professor of Clinical Medicine in the Faculty of Medicine of Paris. Edited with the assent of the author by Hobart Amory Hare, M.D., Professor of Therapeutics in the Jefferson Medical College of Philadelphia. In one handsome octavo volume of 414 pages, with 113 engravings. Philadelphia: Lea Brothers & Co. 1895.

The Climates and Baths of Great Britain, being the Report of a Committee of the Royal Medical and Chirurgical Society of London. W. M. Ord, M.D., Chairman; A. E. Garrod, M.D., Hon. Secretary. Volume I. The Climates of the South of England and the Chief Medicinal Springs of Great Britain. Contributors; Robert Barnes, M.D.; J. Mitchell Bruce, M.D.; W. Howship Dickinson, M.D.; William Ewart, M.D.; A. E. Garrod, M.D.; W. Lazarus Barlow, M.D.; Malcolm Morris, F.R.C.S.E.; W. M. Ord, M.D.; F. Penrose, M.D.; Frederick Roberts, M.D.; E. Symes Thompson, M.D. London: Macmillan & Co. 1895.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum.............................. 2
Antikamnia Chemical Company...Antikamnia 30
Apollinaris Co.............................. 14
Baker, L. W., M.D.... ....Riverview 19
Baker, Dr. W. H..............................Card 19
Battle & Co. ....Bromidia 20
Bellevue Hosp. Med. Col..... Sessions of '94-95 16
B. H. R. Distilling Co.............................. 24
Boehringer & Soehne..................Ferratin 12
Borine Chemical Co..............................22, 29
Bowdoin College...........Medical Department 1
Bowker, Dr. E. M........... ......Vaccine Virus 5
Boylston Medical Prize Questions............ 2
Breitenbach Co., M. J...........Pepto-Mangan 4
Castle, W. & Co..................Steam Steriliser 21
Channing, Dr. Walter.............................. 19
Chauncy Hall School.............................. 31
Cocke, Dr. James R.............................. 19
Codman & Shurtleff......Surgical Instruments 23
Coll. of Physicians and Surgeons, Boston... 16
Coll. Physicians and Surgeons, Baltimore, 16
Columbian University.............................. ... 16
Crittenton, C. N............Hydroleine, etc. 6, 13, 18
Cutter, Dr. W. P.............................. 19
Dadirrian, Dr..............................Matzoon 2
Dartmouth College, N. H....Med. Department 1
Douglass, Dr. DeF ....Artificial Limbs 5
Fairchild Bros. & Foster..........Milk Mixture 1
Farwell & Rhines..................Diabetes Flour 2
Feeble-Minded Youth, Inst. for..Barre, Mass. 1
Fisk & Arnold..............................Artificial Limbs 5
Flood, Dr. Everett.............................. 1
Fougera, E. & Co........Imp'g Pharmacists 8, 9, 26, 27
Gear, J. Frank............Surgical Instruments 6
Goldthwaite, Dr. S. V.............................. 1
Greene, Dr. E. M........Examinations of Sputa 1
Harvard Baby Food Co.............................. 2
Harvard University........Dental Department 1
Harvard University.......Medical Department 3
Johnson & Johnson..............................Kola 21
Kingsbury, Dr. A. D..............................Card 1
Lambert Pharmacal Co..................Listerine 4
Leedom, Charles..................Nuclein Solution 13
Lehn & Fink..............................Mfg. Chemists 11
Lloyd, Andrew J. & Co. .....Manufg. Opticians 2
Londonderry Lithia Water.............................. 2
Long Island College Hospital.............................. 2
Mackie, Dr. L. V. G. .... Sanitarium 1
Marks, A. A..............................Artificial Limbs 2
Martin, Dr. F. C..............................Vaccine Virus 3
McArthur Hypophosphite Co..............................
McElroy, P. J..............................Glass Syringes 5
Medico-Chirurgical College.............................. 1
Norton, Dr. Eben O......... ....Card 1
N. Y. Polyclinic and Hospital.............................. 1
N. Y. Pharmacal Association....Lactopeptine 14
N. Y. Post-Graduate School and Hospital.. 1
Oakland Chemical Co.......Hydrogen Dioxide 2
Office To Let.............................. 2
Pabst Brewing Co.............................. 1
Patch, E. L. Co.............. .....Lithia Tablets 2
Peake & Buzzell ....Surgeons' Supplies 2
Pinaud, Ed..............................Sels Romains 2
Planten, H., & Son..............................Capsules 5
Polk, R. L. & Co........Med. and Surg. Register 2
Practice For Sale..............................
Purdue Frederick Co., The..............................
Rhode Island Hospital... ....
Ring, Dr. Allan Mott.........Nervous Diseases 1
Russell, Dr. F. W ....Card 1
Schulze-Berge & Koechl.......Migranin, etc. 5, 3
Scott & Bowne.............................. ....
Stedman, Dr. Henry R..............................Card 1
Strong, Dr. S. E..............................Sanitarium
Thayer, Henry & Co.............................. 1
Theodore Metcalf Co..............................Coca 1
Tufts College. 1
Twitchell, Dr. George B.................. Card 1
Tyree, J. S. ....Antiseptic Powder 2
University of Maryland.................. ... 1
University of Vermont.............................. 1
Walker Pharmacal Co.................Phytoline
Walnut Lodge Hospital.............................. 1
Warner, Wm. R., & Co.................. .Pills, etc. 1
Waterman, Dr. Thomas..Animal Vaccine Virus
Weeks & Potter Co. ....Quinona
Weinhagen, H.......................Thermometers
Wheeler, Dr. T. B... ....Phosphates
White, Dr. Walter H..............................Card 1
Willard, Dr. A. J..............................Card 1
Woman's Hospital, Lowell.............................. 1
Woman's Medical College, Baltimore.... .. 1
Woman's Med. Coll..of the New York Infirmary 1
Woodward, L. F. ....Stammering 1
Wool Oil Refining Co .... Wool Oil 2
Yale University...........Medical Department 1

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PAGE

ORIGINAL ARTICLES.

The Employment of Mechanical Force in Treatment of Lateral Curvature. *By E. H. Bradford, M.D., and E. G. Brackett, M.D.* ... 357

Modern Theories and Treatment of Eczema. *By John T. Bowen, M.D.*, Assistant Physician for Diseases of the Skin, Massachusetts General Hospital, Boston ... 361

Teachings of the Old Surgeons. *By J. G. Mumford, M.D.*, Boston, Mass. (Concluded.) ... 367

The Gonococcus. *By Henry Dexter Chadwick, M.D.*, Surgical Interne, Boston City Hospital. (Concluded.) ... 371

REPORTS OF SOCIETIES.

Merican Neurological Association. Twenty-First Annual Meeting, Boston, June 5, 6 and 7, 1895. (Concluded.) ... 373

Second Day. — Hyperostosis Cranii (Cephalomegaly), with illustrations.— Cortical Localization in the Light of Recent Researches into the Minute Anatomy of the Cortex. — Report of a Case of Tumor of the Cerebellum, with Autopsy.— Cases of Brain Tumor.— Presentation of a Brain Tumor.— Injury of the Left Angular Gyrus.—A Case of Hereditary Chorea, with Autopsy.— Insanity and Phthisis, their Concurrency, Co-existence and Transmutation. — Lantern Exhibition of the Medulla Oblongata of a Chimpanzee, with other Specimens.

Third Day. — The Diagnosis of Hemorrhagic Cerebral Pachymeningitis. — Tabes Dorsalis Combined with Multiple Sclerosis.— A Contribution to the Pathology and Morbid Anatomy of Amyotrophic Lateral Sclerosis.— Report of a Case of Peroneal Muscular Atrophy, with Autopsy. — A Case of Writer's Cramp, with Associated Cramp of the other Muscles on the Same Side.— The Etiology of Obstetrical Paralysis.

EDITORIALS.

Lesions Produced by the Action of Certain Poisons on the Nerve-Cells. ... 378

Medical Notes ... 380

The Library of the Surgeon-General's Office of the United States Army.— Every Fatal Case of Typhoid. — Small-pox in London. — Dr. Hughlings Jackson Honored.— The Prohibition of Wet Nurses.— A Successful Operation for Intussusception in a Child Four Months Old.— A Linguist in the Navy.

PAGE

New England.

Acute Infectious Diseases in Boston.— Contagious Diseases in Cambridge.

New York.

The Prevention of Contagious Diseases in Schools. — A Fortunate Combination. — The Case of Dr. Burnette.— A Case of Raynaud's Disease.— The Question of Child Insurance.— Improvement in the Public Health.

MISCELLANY.

The Craig Colony for Epileptics ... 381

Electrotherapy as a Means of Diagnosis in Gynecology ... 382

A Persevering Therapeutist ... 383

Meteorological Record, September 28, 1895. 383

Record of Mortality, September 28, 1895... 383

Army, Navy and Marine-Hospital Services. 384

Society Notices ... 384

Harvard Medical School. Evening Lectures ... 384

Recent Death ... 384

Books and Pamphlets Received ... 384

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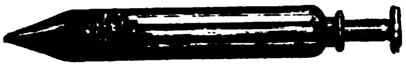

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PAGE 4.

BOYLSTON
MEDICAL PRIZE QUESTIONS
FOR 1896-97.

For particulars address W. F. Whitne M.D., Secretary Harvard Medical Scho Boston, Mass.

Original Articles.

THE EMPLOYMENT OF MECHANICAL FORCE IN TREATMENT OF LATERAL CURVATURE.[1]

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

THE treatment of lateral curvature is simple in theory. Briefly stated, it is to overcome as much as possible, the distortion of the spine and to maintain the corrected position until the spinal column can remain straight without artificial aid; but. in practice, difficulties are met from the osseous and ligamentous resistance in the distorted spine. The amount of flexibility in these cases of curved spines will be found to vary; and it is advisable for clinical purposes to distinguish between cases of simple deviation of a flexible spine from whatever cause, curves which the patient can entirely correct by voluntary effort, and those cases of true scoliosis in which the curve is pronounced and in which it will usually be found that the back cannot easily be made entirely straight, a portion of the curve being found to remain uncorrected during either recumbency or suspension and the application of considerable manual force.

If a dissected spinal column is examined, it will be found that not only are spines different in the amount of resistance on bending or twisting them, but the different parts of the same spinal column vary in their resistance. This will be found largely due to the ligaments; for example, the check to backward flexibility is chiefly the strong anterior ligament passing along the front of the vertebral column. The younger the spinal column the greater the flexibility.

An examination of the bones of a specimen of lateral curvature shows the fact that the vertebral bodies are altered in shape, the most noticeable being in the thickness of the sides of the vertebræ, and this condition is constant in all well-marked cases of lateral curvature with rotation. It exists in a less degree in a number of cases where no lateral curvature is noticed; and this in all probability explains the tendency in many instances to the development of the curve, and which is analogous to the tendency to aggravated knock-knee which follows the lengthened condition of the internal condyle. In addition to the osseous deformity it will be found that the shape and attachment of the ligaments are such as to hold the spine in its distorted position, so that there exists both an osseous and a ligamentous resistance to the correction of the distortion.

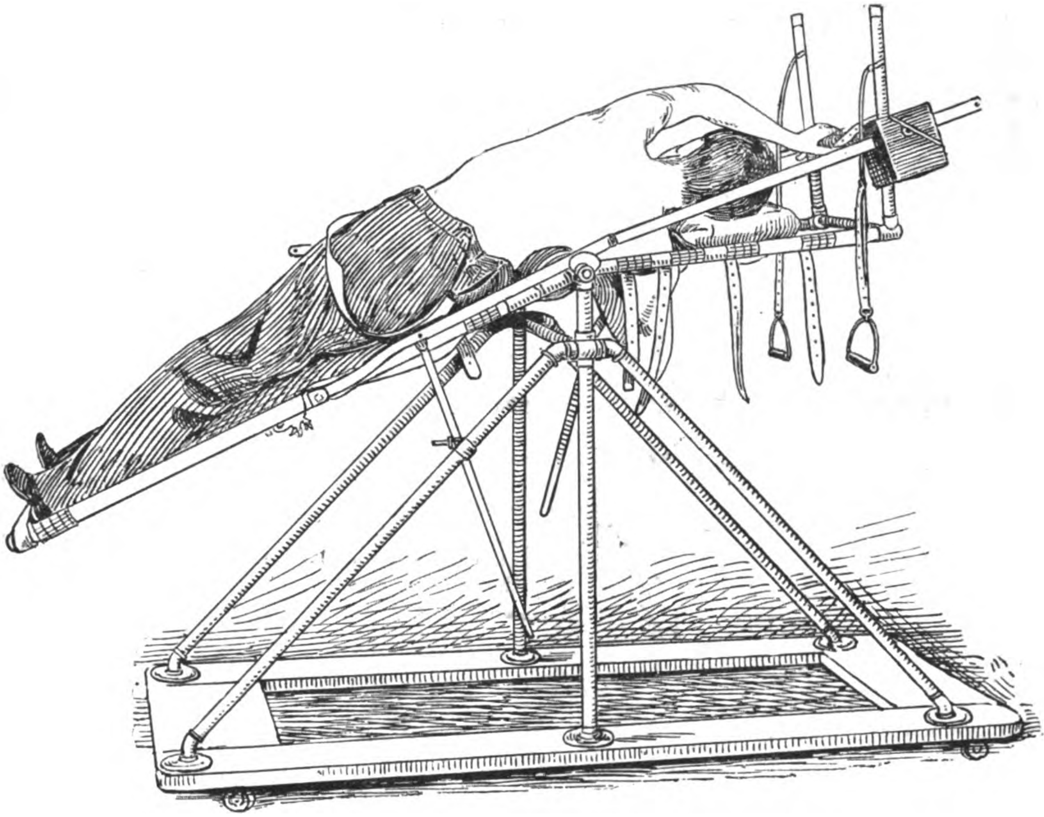


FIG. 1. Modified Zander appliance for stretching curves.

It may, therefore, be assumed that in the treatment of pronounced scoliosis there are two problems that present themselves to the surgeon: first, that of increasing the flexibility of the spine in the portions which resist correction, in order that it may be placed in as straight a position as possible; and, second, of retention in this position for a sufficient time to overcome or diminish the unsymmetrical shape of the various vertebræ affected.

An increase in the flexibility of the spine is to a certain extent possible by practice. The practice that is necessary is not the ordinary gymnastic exercise devised for the purpose of strengthening muscles, but movements destined to act for stretching certain ligaments, and is similar to that which is carried out by those training themselves as contortionists or dancers. Without attempting to describe the physiology of this practice, it can be roughly stated that it consists of daily practice in stretching, never carried on beyond the point of pain, yet persistently and continuously practised with a gradual increase of motion attempted, allowing where it is possible, gravity to act as a force to stretch the ligaments and resistant structures.

---

[1] Read before the Orthopedic Section of the Academy of Medicine, Philadelphia.

It is manifest that no exercise or set of exercises devoted to the strengthening of the muscles can directly affect the shape and size of the bones. In order to correct a faulty shape, treatment to be desired should be similar to the treatment that is successful in such cases of knock-knee as are amenable to conservative or non-operative treatment. This treatment consists of removing or diminishing the weight falling on the non-developed portion of bone that it may grow normally. That this can be done successfully in knock-knee has been abundantly proved by clinical facts; and there is no reason why if the same conditions were applied to the vertebræ during the growth period of the spinal column that a similar change could not be effected in the shape of the vertebral bodies.

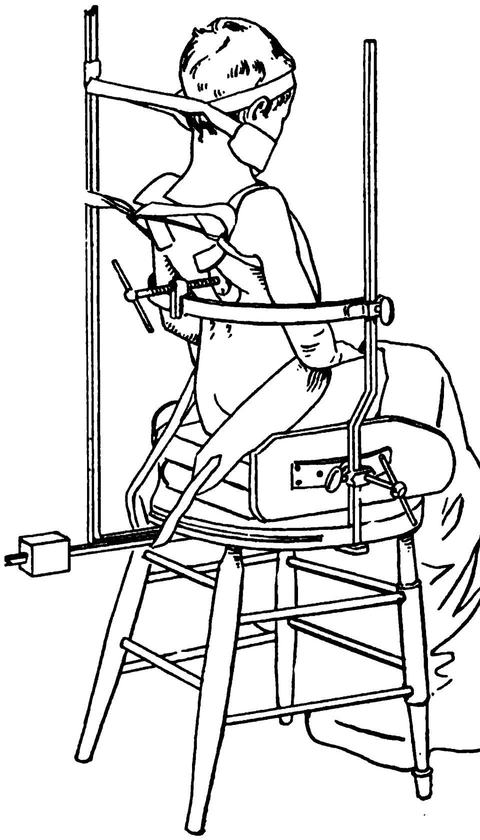


FIG. 2. Modified Zander's stretching apparatus.

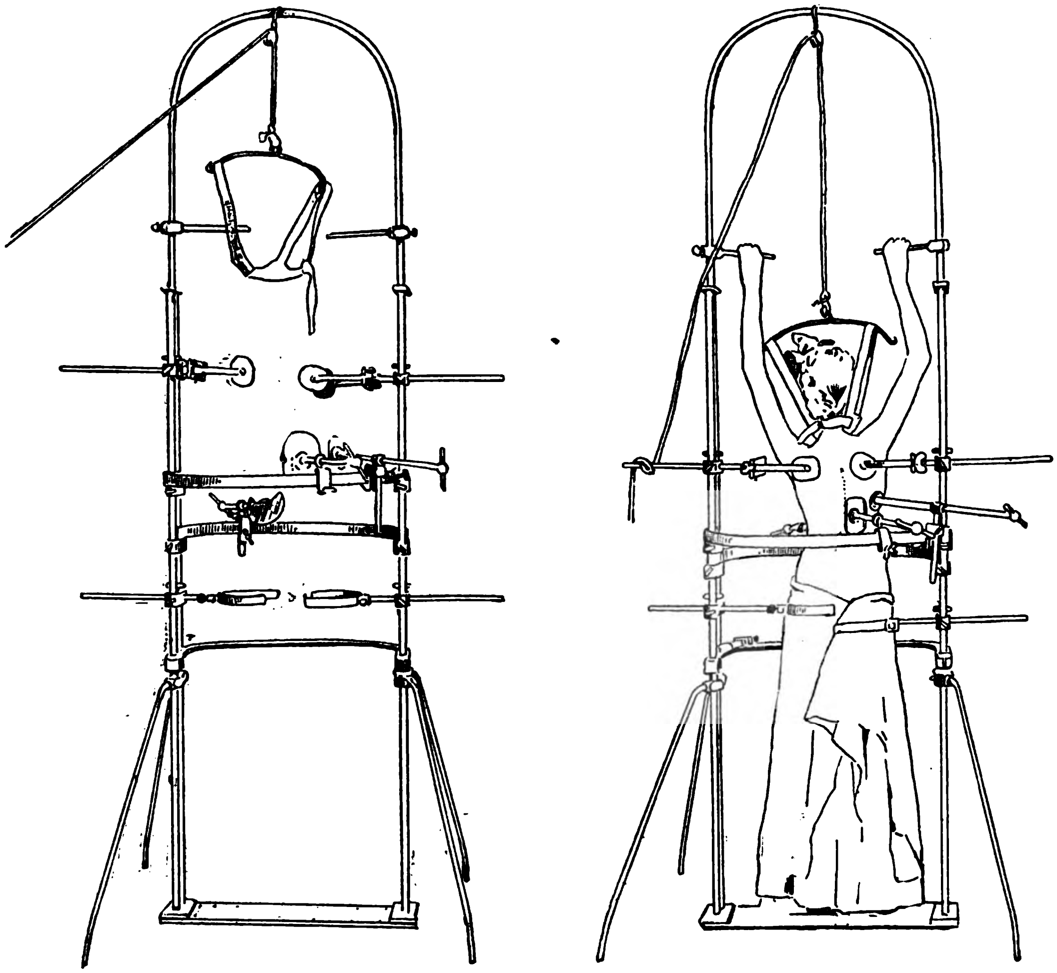
The rational treatment, then, of lateral curvature would seem to consist in a preliminary attempt to increase the flexibility of the spinal column, especially the backward flexibility, followed by efforts to throw the weight of the trunk largely upon the articulating surfaces or crowded portion of the bodies. That this cannot be done absolutely may be admitted. That it can be done measurably is certainly true. That it must be done in such a way as will allow the patients exercise and activity is self-evident. The defects of the old treatment by recumbency, otherwise rational and scientific, carried out for years were manifest. The treatment was to the majority of patients worse than the affection itself.

Lorenz was the first to show the advantage of using the weight of the body as a means for stretching the ligaments; the trunk being placed in such a position that the resisting muscles were relaxed or at a disadvantage. His measures have been variously modified and have been used extensively with advantage. The apparatus devised by Zander has elaborated the idea and carried it to greater perfection, giving more precision to Lorenz's method. The disadvantage of the appliances of Zander is their expense; and for that reason they are beyond the use of the average practitioner. The appliances shown in the accompanying illustrations will be found not to be expensive. They are designed for the purpose of increasing the backward and lateral flexibility of the spinal column, and by their means the flexibility of the spinal column at every part can be increased. The amount of force can be graduated in such a way that the patient is never subjected to violence, but a carefully-graduated amount of force can be used. The apparatus can be used as an appliance for passive exercise or for fixed position if desired.

Recumbent Exercise. — Two strong uprights of gas-pipe, three feet in height, and which are stayed by oblique bars, are placed two feet apart, and are connected by a rod of steel placed horizontally between the upper extremities. From this bar is hinged on either side a rectangular frame, so that the free extremity of each moves in a vertical plane. Across the point of union of the two frames is fastened a pad six inches in width, which is designed to make pressure at any point of the trunk that may be desired; and across the frames are stretched straps of broad webbing, on which the patient lies. On one side of each of the frames is attached a strong bar of steel, which projects beyond the joint of motion; and this carries a sliding weight which can be adjusted to counterbalance the weight of the patient, so that the apparatus may remain horizontal while the patient is in position. Each frame has hinged to its side, a vertical bar of iron which passes through a socket on one of the uprights of the frame and by a hand-screw is connected at any point, so that the frame may be held at any angle.

The object of the apparatus is to make pressure with bending of the trunk or spine at any point desired. The two portions of the frame are brought to the same level, so as to make a horizontal couch; and on this the patient lies either on the back or on the side, with the pad under the part on which it is desired to make pressure and increase the flexibility. If in the former position, both hands are made to grasp the upright at the head of the crutch of the couch or the straps attached to them; or in the latter position, the under arm is passed between the straps and allowed to hang down below the frame, and the upper grasps the strap attached to the uprights. The screw which fixes the lower frame is then loosened, and as the upper part of the body is held in position, the downward motion of the lower causes the bending with pressure at the point of the pad which is the centre of motion. The feet are lowered until the pressure is felt on the spine, when the frame is released and brought back by the weights to the horizontal position.

Sitting Exercise. — On either side of an ordinary chair is secured a firm upright of iron, placed at twenty inches apart, and extending three feet above the seat of the chair. On either side of the chair and secured to the upright is placed a flat pad, which is made to work on a screw attached to the upright, so that these pads may be approximated, and so make pressure on the thighs of the patient as to prevent



Figs. 3 and 4. Modified Hoffa-Schede appliance for pressure correction.

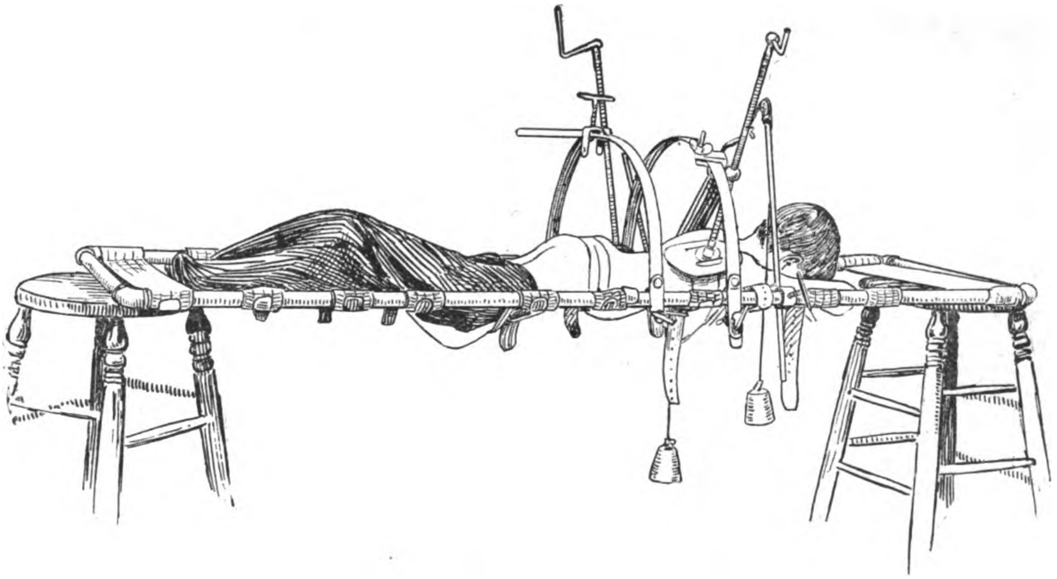


Fig. 5. Recumbent pressure correction.

twisting. On the uprights are fastened semicircular bands of iron, which are made to pass behind the patient, which may be adjusted at any height on the upright, and on this bar is secured a screw-plate, which is placed against the back of the patient. To the back of the chair is fastened a rod of iron bent at a right angle, and secured by a pivot joint by the angle at the centre of the back of the chair. The upright of this right-angle rod extends to four feet above the chair, and the horizontal portion three feet. The horizontal portion carries a weight which may be adjusted at any distance from the point of motion. Straps connect the head and shoulders to the upright cord.

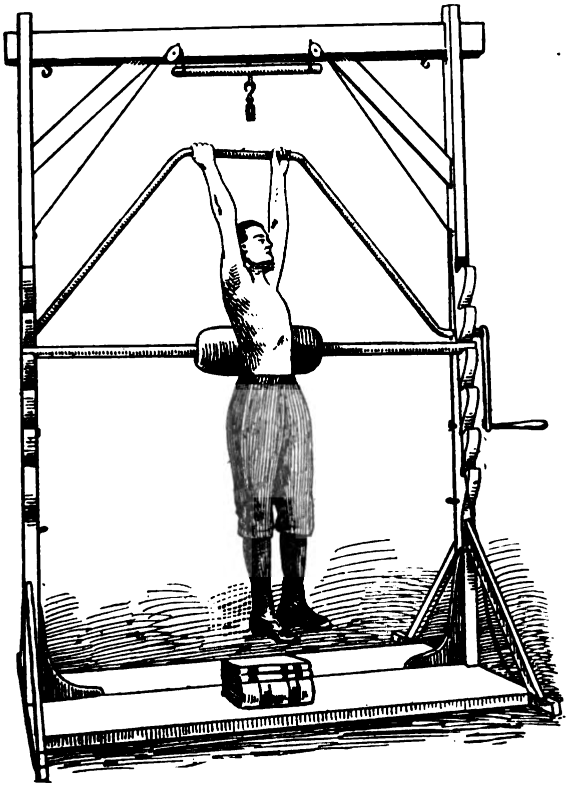


FIG. 6. Modified Beely appliance for stretching curves.

The patient is placed in position in the chair, and the plate adjusted to make resistance against the back at the point where it is desired to increase the flexibility. The straps are then placed over the shoulders and head, and by means of the sliding weight the force applied is regulated to the comfort and endurance of the patient.

Pressure Appliance. — Schede has said that the treatment of lateral curvature consists in the treatment of its most important feature, namely, rotation; and it is for this that a specially devised apparatus is employed, for ordinary gymnastic appliances are not devised to overcome the resistance of this distortion. The apparatuses of Hoffa and Schede are evidently efficient. Against the use of appliances of this sort, it is urged that pressure upon the ribs weakens the articulation between the ribs and the spinal column without twisting the spinal column itself; but that this statement is incorrect, has been shown by clinical experience and by experiments. No muscular exertion of the patient can directly untwist the distorted and resistant rotated spinal column as efficiently as the mechanical pressure of a Hoffa, Schede, Lorenz or Zander appliance. That this can be used without pain is also true; and if they are applied daily with judgment, it will be found that less and less force will be needed to correct the rotation, until it becomes within the muscular control of the patient to assume by voluntary effort, a relatively undistorted position.

An objection to the appliances of Hoffa, Schede, Weigel, and the one previously used by the writer is that, in order to make use of it at its greatest mechanical advantage, it is necessary that the superincumbent weight be removed from the trunk. To do this thoroughly the patients are suspended, and this involves great discomfort on the part of the patient if carried out for any length of time. The superincumbent weight can be removed if the patient is placed in the recumbent position, and the accompanying illustration shows how the pressure correction of rotation can be carried out efficiently, and more comfortably to the patient, than by the appliances designed for pressure in the upright position. It will be found that Schede's suggestion of the application of a correction force by the means of adhesive plaster attached to a cord, passing over a pulley and connected with a weight, is a most excellent one, and will be found of great value. It will be noticed by those who use the rotation correction appliance that some of the correction force is not from the direct pressure alone used in the appliance, but this pressure is aided by the force employed in breathing. In ordinary respiration the chest is expanded by the descent of the diaphragm and the action of the thoracic muscles. If pressure is used in such a direction that the expansion of one side is not possible, a greater force is applied to the expansion of the other side, or portion of the side.

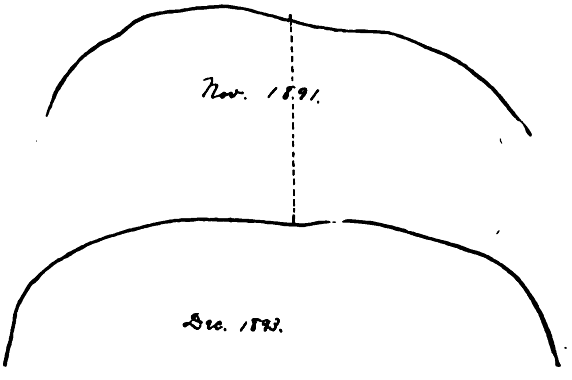


FIG. 7. Tracings of the back, before and after correction treatment.

Recumbent Frame for the Correction of Rotation.— The frame is made of three-quarters-inch galvanized gas-pipe, six feet in length and twenty-four inches in width.

Across this is stretched, with a space of four to six inches, broad webbing straps on which the patient lies, and which may be made tight or loose according as we may wish to make greater or less pressure over certain portions. The frame is fitted with heavy circular bands of iron, which are adjustable at any point in the length of the frame, and on these are carried the screws and pads by which the pressure is made on the projection portions of the thorax at any point in front and behind, and at any angle in the same manner as in the upright machine.

In addition to this, the plaster adhesive straps described by Schede are placed around the sides of the thorax, and are attached to weights by a cord which passes through a pulley at the sides of the frame, and in this way exerts a lateral pressure and at the same time a torsion pressure at the point desired. The advantages of the exercise in this position are that all the force from the superincumbent weight is removed, and the fatigue of the patient being less, the exercise can be carried on for a much longer time.

Of the treatment of scoliosis by the temporary use of fixation appliances nothing will be said in this paper. The subject has already been referred to in a a paper in the *Boston Medical and Surgical Journal* of May 11, 1893, and will be again more fully treated in a subsequent paper. The same is true of gymnastic exercises.

The object of the present paper is to show that resistant cases of lateral curvature, up to the age of completest ossification, can be treated with precision, and that the stretching of ligaments and the increasing of the flexibility of the spine is possible, and can be done if proper means are used for the purpose.

The object of these appliances is clear — to stretch by means of pressure the shortened ligaments which maintain the distorted position and prevent correction. If flexibility is gained, the correct position can be assumed and maintained as the muscles gain their strength and are developed by gymnastic treatment, massage and electricity. For the subsequent treatment in the severe cases, fixation by means of appliances for a while, and developmental muscular exercises are needed. If the corrected attitude is maintained, the bones will be in a position to grow into a more normal shape. In the lighter cases only developmental muscular exercises are needed after the flexibility has been secured.

Illustrative cases of correction were published in the JOURNAL, May 11, 1893. Accompanying (Fig. 7) is the cross tracing of the back of a child seven years old with scoliosis with rotation before treatment, and two years after correction treatment.

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MODERN THEORIES AND TREATMENT OF ECZEMA.[1]

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A GREAT diversity of opinion has prevailed among different schools and different authors from the earliest days of dermatology as to the proper conception of the term eczema, an affection that is so varied in its clinical manifestations, and so greatly influenced by many factors of both external and internal nature that to-day it is improbable that a definition satisfactory to the larger number of students of this disease could be formulated. Many writers have indeed abandoned all attempt at a strict definition, and have contented themselves with a discussion of the various clinical appearances and pathological features that are met with. Of late years much interest has been aroused by the doctrine of a parasitic causation for some of its forms, and certain authors have gone so far as to declare that every case, that is properly speaking an eczema, is of parasitic origin. My object is not an attempt to cover the whole field of the pathology of eczema, but to describe some of the later theories that have been advanced, and to point out their strength or weakness, as they appear to me.

The chief writers in their conception of eczema may be divided broadly into three classes: (1) those who consider the clinical and anatomical features as of chief importance, (2) those who lay most stress upon the course of the disease, (3) those who base their conception upon the etiology.

In the first class, those who make the *form* of the disease their criterion, belong notably Hebra and the Vienna School. Hebra's definition of eczema is, "An affection of the skin, of mostly chronic course, characterized by the formation of grouped papules and vesicles, or by more or less deeply red patches covered with scales, or weeping; or in which, in addition to these features, yellowish or green or brown crusts are formed. This affection is continually accompanied by severe itching and therefore by excoriations, and is not contagious." Hebra, therefore, regarding the anatomical features as of chief importance in the conception of eczema, cleared the air by proving that many conditions that had been regarded as independent diseases were in reality but different stages or forms of an inflammatory process that had hitherto been recognized in a much more restricted way.

To this view the Vienna School has held fast, and Neisser declares his loyalty to the old definition of Hebra, which he would enlarge only by laying greater stress on the changes in the epithelium, changes which he regards as specific, and as essential to the formation of the clinical picture of eczema.

These epithelial changes have been especially studied by Leloir, and consist in (*a*) the immigration of pus corpuscles into the spaces between the prickle cells; (*b*) an edema of the epidermis, and particularly an edema of the basal horny layer; (*c*) a tendency to dekeratinization, shown by the disappearance or lessening of the eleidine, and of the granular layer; (*d*) the persistence of the nuclei of the horny layer, which in consequence of the dekeratinizing process are no longer coherent, having lost their normal adhesive attribute, and tend to exfoliate in the form of scales. At a later stage, begins the process of vesiculation, of the formation of the elementary lesion of eczema, which has its place usually in the middle or upper layers of the rete Malpighii. This process of vesiculation consists essentially in the formation of a clear space or cavity between the nucleus and protoplasm of the cell, and is due to a sort of dropsy of the epithelial cell. This "altération cavitaire" goes on increasing until a reticulum is formed of various sized meshes containing the nuclei. This is the vesicle or primary lesion of eczema.

Before the appearance of these epithelial alterations, however, Leloir was able, in cases of erythematous eczema, to detect a dilatation of the vessels in the papillary layer of the corium. These vessels were all dilated and filled with blood, and there was also observed a migration of the white corpuscles into the papillæ, which are filled with round cells, and also into the epidermis, where they appear as migratory cells. Besides this the papillæ were seen to be filled with an abundant serous exudation, one of the chief characteristics of eczema. This serous exudation it is, according to Leloir, that determines the epithelial alterations. Neisser, on the contrary, thinks that this is very improbable in cases of eczema not produced by external agencies. In cases of so-called artificial eczema, where the affection is obviously due to the action of an irritant acting from without, he considers that the epithelium is directly and in the first instance affected, while the inflammation may be due partly to the epithelial alteration, partly to the direct action of the irritant on the vessels. If it could be proved histologically that an artificial eczema differs from the acute stage of the chronic process in the epithelial cells being affected before there are signs of exudation, an important argument in favor of separating artificial eczemas from the chronic process would be obtained. Unfortunately, we know very little of the way in which the irritant or agent that produces an eczema acts, and such questions may be regarded as offering a legitimate field for study, and their solution the certainty of a great advance in our knowledge. One thing, however, seems clear, that there is an epithelial alteration in eczema (that has only of late years received due recognition), a prominent feature of which is the "altération cavitaire" of the individual cells, together with a dekeratinization in the upper layers, edema of the epithelium, and the immigration of exuded cells.

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[1] Read before the Warren Club, May 7, 1895.

That the nervous system plays an important rôle in eczema there can be little doubt. The intense itching, which causes the patient to rub and scratch the affected part, thus increasing the inflammation, is one of the most important factors in determining the course of the affection, but we are here also in the dark as to its etiology. It may be conjectured that the inflammatory infiltration in the upper layers of the corium, acts directly upon the nerve filaments, or it may be that there are definite structural alterations of the nerves themselves. Anatomical reasons for the latter view are advanced only by Colomiatti and Leloir, who have described changes in the nerve fibres in cases of chronic eczema. Leloir declares that there are certain varieties of eczema where there are undeniable lesions of the peripheral nerves, and to these he gives the name eczematous dermato-neuroses. Relying upon these anatomical changes in the nerves (which have not as yet received confirmation from other sources) Leloir and Colomiatti argue for the nervous origin of many forms of eczema, and in this they are more or less followed by Schwimmer and Bulkley. These authors looking upon eczema as (in great part) a constitutional affection, consider that it has its origin in tropho-neurotic influences proceeding from various nervous conditions, and cite in support of their view the frequency with which these nervous affections are followed by or associated with an eczema. Besides these writers few if any have been willing to ascribe to tropho-neurotic influences more than a very speculative value, the subject of tropho-neuroses, generally being so little susceptible of proof. Following Hebra and of late Neisser, it seems most rational to look upon the undeniable relationship that often exists between nervous disorders and eczema as of a vaso-motor character.

An able and instructive paper on the pathology of eczema was read by Neisser before the German Dermatological Society in 1892. He holds fast in the essence to the doctrines of Hebra, and as his paper is in accord, to a certain extent with my own views, I quote the *résumé* that he offers of the present state of our knowledge of the etiology of this disease. Neisser distinguishes (1) the primary, actual cause of eczema, (2) the predisposing agencies that pave the way for that cause, (3) the conditions which determine the chronicity of an eczema.

(1) As primary actual causes we now recognize the action of mechanical agencies; chemical substances that exert their effect from without; chemical toxic substances that exert their effect from within the economy; and micro-organisms — bacteria, fungi, and perhaps animal parasites.

(2) Predisposing agencies which increase the susceptibility of the skin for eczematous irritation. In this class are included (*a*) general conditions, as anemia, cachexias, the lymphatic diathesis, gout, diabetes, etc.; (*b*) local conditions of the skin, as seborrhea, prurigo, psoriasis, tinea tricophytina, various forms of dermatitis, etc., also abnormal conditions of the vessel's tone, as in the dentition of infants, or vaso-motor neuroses.

(3) The conditions which determine the chronicity of an eczema. This is the chief question upon which opinions and schools differ, What causes an eczema to become chronic?

In his answer to this question he separates the primary causes that directly determine the chronicity from the secondary causes that affect simply its *course*.

(1) A primary chemical or mechanical agency is not always of temporary or limited duration, but may be in continuous or frequently recurring activity.

(2) The effects of the action of chemical or mechanical agencies, perhaps of a short duration, may persist at the place of irritation in the form of tissue lesions, not perhaps apparent, but ready to show themselves if new favoring influences present themselves.

(3) There may be lesions of the cells and vessels over a greater territory than the outbreak of eczema which was confined to the part most intensely affected, would indicate.

(4) In case micro-organisms are the exciting cause both the recurrence and the dissemination are easily understood.

Secondarily, the *course* may be affected by various circumstances, such as the implantation of micro-organisms, contact with water, soap and irritating substances. The partial loss of the epithelial covering favors nervous phenomena such as itching, and the vessel walls may be badly damaged. Also irritation of contiguous parts, or from nasal and anal secretions, may affect the course. Causes that lie in the organism itself may favor the course of an eczema; not only those of external character, as defects of the circulation, varicose veins, etc., imperfections in the skin itself, as seborrhea, hyperidrosis, etc., but also internal conditions, as dentition, alimentary disturbances, uterine affections, which act in a reflex manner through the vaso-motor system, diabetes, arthritis, kidney affections and many others.

With regard to most of these views I record myself as in agreement. As to the question of separating the acute cutaneous inflammations of eczematous type caused by the direct action of external irritants from the eczemas, I am inclined to believe with Besnier, Leloir, Brocq, White, Crocker and most authors not directly connected with the Vienna School, that this separation should be made, at least for the present. It is true, as Neisser states, that many cases of dermatitis venenata are precisely similar in their clinical aspect to the acute stage of a chronic relapsing eczema, but it is equally true that there are certain points of distinction that often make it possible for the expert to determine the etiology of the affection (as has been pointed out by White), without the aid of a history, or of the significance of the locality affected.

The artificial dermatitis has usually an acute course and yet this too may be followed by recurrent attacks of eczema without exposure to the primary cause, either *in loco* or at a distance from the first eruption. In these cases the artificial dermatitis is to be regarded as the starting-point or essential cause of the eczema, to which are added, in determining the relapses, the predisposing causes mentioned and the conditions that favor chronicity. Among the latter conditions it seems to me that much stress should properly be laid on the assumption, mentioned above by Neisser, that the primary dermatitis, whether caused by external chemical and bacteriological irritants, or by influences at present not understood, leaves, after the skin has returned to its natural color and consistency, "damaged cells" or irritable "vessels," so that causes that would be innocuous to a healthy skin are sufficient to give rise to an attack of eczema. Otherwise, it is difficult to explain the predisposition that exists in apparently healthy subjects to recurrent attacks of eczema when once an acute dermatitis has been experienced.

The artificial dermatitises form a well-defined group, both from their etiology and from the clinical appearances in some instances, although no evidence of their histological divergence from the type of acute eczema has yet been presented. For the present at least they should be grouped by themselves, although considered as belonging to the class of eczematous affections. For I agree with Török and Brocq that in the present state of our knowledge we should look upon the eczemas as a group or class, although I am in no sense prepared to accept Brocq's subdivisions. But, in fact, is Neisser so far away from the views of those who would separate artificial dermatitis from eczema, when he divides the eczema class as follows: (1) eczema acutum circumscriptum, produced by various external causes, to which are to be added the acute eczemas that may be of parasitic origin; (2) eczematosis, in order to give a name to the eruptions that recur continually in an acute or subacute form; (3) the localized chronic eczema?

It is only, it seems to me, by viewing the process in a broad way that we are likely to obtain further truth as to the etiology. Attempts have therefore been made to separate from the group of eczemas, individual processes; and it is along these lines that we may look for the advances of the future. Naturally, much difference of opinion exists as to the right of various forms to be excluded from the eczema group. Eczema marginatum, the form found chiefly upon the thigh and scrotum, and distinguished by circinate patches with bright red advancing borders and scaling centres, is certainly to be distinguished from the eczemas.

I agree with Neisser and Besnier that what has been described by the name eczema marginatum comprises a variety of processes etiologically distinct, in some instances being caused by the tricophyton tonsurans, in others by the microsporon minutissimum, the affection called erythrasma, while in others it is in all probability due to a variety of micro-organisms. It may often be determined by the microscope which of these causes is active. As Neisser points out, it may be difficult to say in a given case whether the eczematous inflammation be primary or secondary, whether the parasites are engrafted upon a pre-existing eczematous inflammation, or are themselves the cause of it; but in either event, as it has been proved that this class as formerly constituted comprises several entirely distinct cutaneous affections, the name of eczema should only be retained for the convenience of mutual understanding, until further study, for which there is a fruitful field, has succeeded in dividing the group into its individual elements.

A word as to the different forms, classed by the Vienna School under eczema, which the French consider as independent affections under the name of lichen. The lichen simplex chronique of Vidal is the only one of these affections that seems to possess any distinct claims to a separate position. The pathognomonic features of lichen simplex chronique as given by Brocq are the nervous state or temperament of the subjects affected, the fact that pruritus antedates the eruption, the circumscribed character of the eruption in plaques, its absolute dryness and its chronic rebellious course with tendency to recurrences. It is true that in many cases this form bears a closer resemblance to lichen planus in clinical features, course, and reaction to treatment than it does to eczema. I am not willing, however, to consider its claims to independence as satisfactory, but still it seems to me that this class of cases should be carefully grouped together for further study. The form described by Malcolm Morris under the name of eczema follicularis, which consists of sharply bounded plaques, made up of small red, firm papules situated exclusively about the follicles, often covered with a small scale penetrating the follicle, is regarded by Neisser and Jadassohn as entitled to a place apart from the eczemas, and this view is borne out by the microscopical studies of Jadassohn. Whether their interpretation will be confirmed and accepted, it is as yet too early to predict.

Under impetigo we now understand a vesicular, bullous and pustular eruption, in which the final stage of crusting is most apparent, caused by the action of micro-organisms of various kinds, chiefly those of pus, upon the skin, and often associated with an eczematous inflammation. The so-called impetiginous eczemas are complications of eczema with impetigo; it may be impossible in a given case to say whether the pus micro-organisms were implanted upon a previously inflamed territory, or whether the eczema was a secondary process. Impetigo is therefore contagious, and produced by local inoculation. Impetigo contagiosa is the name that was used before its etiology was known, and under which it is now placed by many writers.

ECZEMA SEBORRHOICUM (UNNA).

Unna has emancipated himself fully from the preexistent theories, which regard eczema from an anatomical and clinical standpoint, and bases his conception of the disease upon purely etiological principles. He defines eczema as a chronic parasitic catarrh of the skin, accompanied by desquamation, itching, and a tendency to respond to irritation with exudation and pronounced inflammation. His position was first defined in 1887, and it may be of interest to examine briefly his theories and to note in how far they have been accepted by other dermatologists. His conception of seborrhea had been previously made known. He regards the oily seborrhea (seboleosa) as caused by a hypersecretion of fat poured out from the sweat-glands. The dry seborheas he would drop entirely from this class, regarding them as chronic inflammatory processes of the skin accompanied by an abnormal amount of fatty matter, which is produced by a hypersecretion of the sweat-glands, and not of the sebaceous glands. This fatty matter he declares is not situated in the scales alone but penetrates the epidermis and corium as in no other known disease. The dry seborrheas are, therefore, according to Unna, examples of seborrheal eczema. The starting-point of almost all seborrheal eczemas is the scalp, where it may exist for years without causing especial notice. The pityriasis capitis which leads to alopecia, and which is identical with seborrhea capitis, comes under this heading, and is Unna's first form of eczema seborrhoicum.

In his second class of cases the scaliness increases and fatty crusts are formed between the hairs, and a corona seborrhoica is formed at the margin of the forehead. Later it may extend to the temples and neck, to the region of the nose and cheeks, etc. This is the so-called *crusty* form.

The third form is classed as the *moist* variety, and in this weeping occurs and the rete may be laid bare. In the sternal region the crusty form is the one usually seen, rarely the scaly and moist. It takes on here a circinate and marginate appearance, with a red border and yellow, greasy centre. From the shoulders the affection spreads downward on the arms, usually in the crusty form, seldom in the moist, and has a marked predilection for the flexor surfaces and for surfaces in contact with one another.

The three forms are often found existing at the same time on different localities. In 1889 Unna, after studying the histology of this form, declared that the pathognomonic feature was an alteration of the epithelial layers, beginning in the lowest prickle cells and continued upward to the horny cells, of a purely edematous nature. In 1892 he made known his discovery of the morococcus, a form of diplococcus that is distinguished by its formation into clusters of a mulberry shape, which will produce characteristic lesions when inoculated in pure culture upon a healthy skin, and which he considers the cause of eczema seborrhoicum.

To what extent have Unna's views of eczema seborrhoicum been accepted?

Besnier considers that there is a complication of eczema with seborrhea, an affection which he had before noted but never properly formulated; that it is impossible to say as does Unna that the inflammation is primary and the seborrhea secondary. He does not further agree with him that the sebaceous glands take no part in the process, believing that both sebaceous and sweat glands are active. He thinks a parasite is probably the causative agent, and that the steatorrhea is probably one of the essential causes in the production of the eczema.

Leloir and Vidal, while apparently accepting Unna's views in great part, declare that the individuals with whom seborrhea is constitutional, often even hereditary, are the ones who are most apt to be affected with seborrheic eczema. In these subjects, psoriasis, pityriasis rosea, etc., may take on a seborrheic appearance. Their microscopical studies confirm in the main the researches of Unna. They add, however, that further investigations both clinical, bacteriological and histological, are necessary to clear up the true nature of the affection or affections, classed by him as seborrheic eczema.

Crocker thinks that it is proper to retain the old name and conception of seborrhea, inasmuch as this affection, though often accompanied by inflammation, may be entirely wanting in all inflammatory appearances. He thinks it probable that seborrhea is an affection caused by micro-organisms. To the cases where clinical signs of inflammation are present he would give the name seborrheic dermatitis; and this he divides into seborrhea eczemaformis, seborrhea psoriasiformis and seborrhea papulosa seu lichenoides, which latter is identical with seborrhea corporis, lichen circinatus, etc.

Elliot thinks that the process is so different clinically from what has hitherto been called eczema that the name should be discarded, and that Crocker's name of seborrheic dermatitis, given to one phase of the disease, is suitable for the whole affection, which he considers a parasitic dermatitis. His histological examinations varied from those of Unna in not showing fat present in the coils or ducts of the sweat-glands, nor a fatty infiltration in the corium and rete, nor does he think that the fatty hypersecretion is derived from the sweat-glands.

Török cannot admit a relationship of the scaling to the crusty and moist forms, nor to eczema generally. The crusty form he would separate entirely from the eczemas and class as a mycosis, while the third or moist form is in his eyes a mixed affection. He is unable to accept the morococcus as the cause of seborrheic eczema, as Unna's inoculation experiments do not prove that the morococcus is not simply a producer of an impetiginous complication.

Neisser's *résumé* of eczema seborrhoicum is that Unna's first or scaling form is not an eczema, but remains a primary affection of the fat secreting glands, with minimal secondary inflammatory manifestations. His second or crusting form is also not an eczema but an affection allied to psoriasis (from which it may often be almost impossible to differentiate it), almost always dry, with a slight inflammatory infiltration. It is probably of parasitic origin and is connected with seborrheal alteration of the skin. His third or moist form is eczematous and parasitic without doubt. It is usually connected with seborrheal alterations of the skin, so that it is impossible at present to decide which factor is most important and should determine the name. It is possible that the second and third forms are forms of the same mycosis.

Taking the opinions that have been cited, and including besides the views of those who have written or spoken at lesser length on the subject, it may be said that Unna's theory has by no means met with general acceptance among experts. Much confusion has, in my opinion, been introduced by the name seborrheic eczema, and much prejudice has in that way been excited against Unna's whole position. If we examine carefully the evidence that he has adduced in support of his theory that there is no such thing as a hypersecretion of the products of the sebaceous glands which causes an accumulation of fatty masses upon the skin, we find that he has by no means proved his case. The histological studies of Unna, Leloir and Elliot fail to confirm the view that the sweat-glands alone are concerned in the hypersecretion of fat, nor do they show any specific changes in the case of seborrheic eczema, as is pointed out by Neisser. I believe that undue weight has been laid upon the pathological significance of the association of eczema and seborrhea. Unna's first or scaly form certainly belongs, with our present knowledge, among the seborrheas, even if it is possible to detect some evidences of inflammation histologically. As Besnier and Neisser say, it is impossible to assert, as does Unna, that the inflammation is primary and the hypersecretion secondary. Until further evidence can be brought we must believe that the sebaceous glands have a part in the hypersecretion of the fatty products.

The second or crusting form should also be separated from the eczemas, as it has been hitherto, under the name of lichen circinatus, seborrhea corporis, etc. Its association with seborrheic affections of the scalp, and the fatty hypersecretion that is unquestionably present, warrant its retention provisionally among the seborrheas, until its etiology has been explained. It may be associated or complicated with various degrees of eczematous inflammation. Its parasitic nature seems highly probable, but is as yet unproved. Its similarity to psoriasis has been pointed out, and the difficulty that often confronts one in differentiating the two affections. Whether in these cases there is a psoriasis modified by its implantation on seborrheal soil, or whether, as Brocq believes, there is a group of affections, intermediate between eczema and psoriasis, which are developed especially on seborrheal subjects and which deserve a separate name — these are questions that may fairly occupy the attention of future investigators.

Unna's third or moist form I would regard as a dermatitis combined usually with seborrheal alterations. It is very difficult to determine the relative importance of the inflammation and hypersecretion. Its parasitic nature seems probable, but as the morococcus has not yet been accepted as the causative agent, nothing definite is known. It deserves a separate place among the class of eczemas, on account of its serpiginous and circinate form, its association with seborrhea, its progress from above downward and its probable parasitic nature. Unna has rendered a service chiefly in calling attention to the combination of clinical appearances that characterizes the third form and its possible etiological relationship to the second form.

A tuberculous eczema, such as Unna calls the eczema localized about the eyes, nose, mouth and ears in children and attended with rhinitis, phlyctenular keratitis and otorrhea, is not accepted in this sense by any of the authorities, so far as I am aware. No proof exists that tubercle bacilli can cause an eczema simply, and if the characteristic new formation is present, we have a tuberculosis, and an eczema only as a complication.

TREATMENT.

Turning now to the treatment of eczema, it is my purpose to pass in review the chief methods that have been introduced or advocated during later years. At the outset it may be said that most of these methods depend for their efficacy upon the consistency of the preparations recommended, their power of adhesion to the skin or their mode of application. No specific has been discovered and few new drugs have been added to our store of internal remedies.

Arsenic is never used as a routine treatment, and never in the acute stages. It is reserved for the chronic, unyielding varieties, and even here its use has been much curtailed. A variety of drugs are used internally, according to the general indications of the individual case, but no new remedies of much value have been introduced. Ergot, phosphorus and antimony have their advocates, but their specific influence on the disease is far from proved.

In the treatment of the acute forms our attention should be directed to the use of remedies to protect the inflamed surface from the outer air, to absorb the secretions and to limit their formation, and to lessen the itching which in many cases is intolerable.

One of the most useful principles that has been introduced during the last fifteen years is that of substituting, especially in the more or less acute forms, variously compounded pastes for the ointments that had previously been relied on. Hebra's method was to spread the ointment or liniment upon lint or cotton and have it worn continually. The good results of this procedure were due in the main to the absolute sealing up of the inflamed surface from the outer air and to the removal of the products of the inflammation. But as fats are an important constituent of all liniments and ointments, it is found that irritation is frequently caused by the splitting up of these fats into fat acids and glycerine, under the influence of the secretions with which they are brought in contact. This irritative property varies apparently much in different cases, owing both to the individual susceptibility and to the grade of the inflammation. It is to be ascribed both to the action of the fat acids and to the glycerine probably, as both of these substances are often of an irritating nature. These drawbacks are obviated by the use of preparations composed of indifferent or astringent powders mixed with vaseline in such proportions that a smooth, thick paste is formed, admirably suited for the absorption of the products of inflammation and for protection from the outer air. Chief among these is the well-known Lassar's paste, composed of equal parts of oxide of zinc and starch in double the quantity of vaseline. Its advantages as claimed have been substantiated by experience. Some of these are that it does not liquefy at the ordinary temperature of the skin, but dries on quickly and can be retained even in very hot weather by sprinkling on a little powder. It can be applied to very small patches, and adapts itself to all parts of the body. Hairy portions of the body are the only ones to which it is not suited, as the hairs become matted together from the solid constituents. It is found in practice that patients who are unable to endure the application of any ointment without violent reaction, bear this preparation with ease, and even where vaseline alone is not borne, the mixture with zinc and starch may suit well.

At the time this paste was first spoken of Lassar believed that salicylic acid was almost a specific for eczema, and he therefore combined it with his paste in the following formula:

Acid. salicyl.	2.0
Vaselin.	50.0
Zinc oxid. Amyl.	āā, 25.0 M.

This paste should be spread over the inflamed and oozing region in a thick layer, and may afterward be covered with a thin layer of absorbent cotton. The dressing is changed once or twice daily if the secretion is considerable; if not, it may be left in position for several days oftentimes. By means of this paste alone many cases may be completely healed without having recourse to more stimulating remedies in the later stages. The salicylic acid is of no practical use in acute forms, and although a small percentage is rarely irritating, it is best left out. The chief action of salicylic acid cutaneously is of a keratolytic character — that is, it has the property more than any drug known of softening and dissolving the horny layer, without at the same time causing a dermatitis. In the later stages of eczema, where there is infiltration in the corium and hypertrophy of the horny layer, the addition of the salicylic acid to the paste is indicated, even in much greater proportions than in the above formula.

Salicylic ointments in the treatment of infantile eczema have been much praised. Taking this paste as a base, various medicaments such as sulphur, ichthyol, boracic acid, etc., may be incorporated with it, and in some instances a more favorable effect obtained than when the drug is mixed with animal fats or with vaseline simply.

Many attempts have been made to produce preparations that when dried upon the skin will form firm but flexible thin coatings, exerting a certain amount of pressure, protecting equally from the irritation of the outer air and from the entrance of micro-organisms, to which various medicaments of known value in eczema may be added. Pick introduced gelatine dressings, which he at first used in combination with chrysarobin in the treatment of psoriasis, and to these Unna and Beiersdorf proposed to add a percentage of glycerine. Later Pick brought forward a sublimate gelatine dressing which he recommends both for the earlier erythematous and papular stages, and for the thickened, scaling varieties. Thirty grams of glycerine are mixed with sufficient water, macerated for several hours, then liquefied on the water bath and evaporated to 75 grams. To this are added 25 grams of glycerine and 0.05 grams of corrosive sublimate. This gelatine dressing is liquefied by heat when used, and a thin coating is painted over the affected part. In chronic eczemas of the lower leg especially, this preparation has often proved itself of value.

Acting upon the principles of the gelatine dressing, and in the endeavor to obtain a preparation that would offer all its advantages without its disadvantages, notably that of being obliged to heat the preparation each time before applying it, Pick introduced tragacanth, and Elliot proposed bassorin as a base for incorporating medicaments, preparations which, like gelatine, are useful in certain forms of eczema as well as in a variety of cutaneous affections. Unna, working upon the same lines, introduced ichthyol varnish, a mixture of ichthyol in various proportions with starch, solutions of albumin, etc. An almost endless variety of substances may be obtained in this way which form protective coatings upon the skin. Their use is limited, however, as it has not been shown that they are superior to other methods, and in many instances their inferiority is distinctly apparent. In certain cases, however, they are a useful addition to our resources.

Much greater practical value must be accorded to the salicylic soap-plaster recommended by Pick for the vesicular and moist as well as the thickened forms of eczema. Its advantages in my experience are far greater in the latter class of cases. Its composition is as follows:

Emplastr. saponat. liquefact.	80.0
Olei olivar.	20.0
Acid. salicyl.	2.5 M.

The plaster is spread, and cut into strips which are firmly adapted to the affected parts and left in position for several days. Its great advantage is that it is not necessary to change it frequently.

A real value must be admitted for ichthyol and resorcin, which belong, according to Unna, to the group of reducing agents, and owe their therapeutic action to this property. Ichthyol as used is really a sulphoichthyolate of ammonium which is obtained from a bituminous substance found in the Tyrol. Its efficacy is probably due (in part) to the large percentage of sulphur it contains, and in part to its consistency, as it readily forms a sort of protecting and adhesive varnish when applied to the skin. Unna considers it of special efficacy in the so-called nervous eczemas and in intertriginous affections. It may be used in solution with water in various proportions, in a thick varnish, mixed with albumin or starch or in ointment form. On moist patches an emulsion with water of the strength of one to ten, or one to twenty, is often of service, especially when followed by a soothing ointment or paste. It may also be incorporated with the various pastes, varnishes and gelatine preparations that have been described. The objections to its use are its color and disagreeable odor. Thiol has the advantage of being odorless, and has seemed to me in many cases an efficient substitute for ichthyol.

Resorcin, which is of much value in many cutaneous affections, has but a small place in the treatment of eczema. In certain scaling forms it may be used with advantage, but its irritating properties, especially in certain individuals, limit its range of usefulness in this affection.

Much prominence has also been given by Unna to his treatment by ointment and plaster muslins, a system that has no doubt its advantages, but which should not be looked upon as superseding other equally good, and in certain cases superior methods. The ointment muslins are made by impregnating muslins on one or both sides with the ointment wished for. The muslins thus prepared are cut into strips, applied to the skin and bound down by muslin bandages. It is often of advantage to spread the ointment or pastes that we wish to use on muslin, and ready-made applications of the sort are often convenient, but it is difficult to see how the method, so minutely elaborated, contains any new principle or offers any especial therapeutic advance.

The plaster muslins are made by spreading the drug to be used upon a thin layer of gutta-percha backed with muslin. The advantage claimed for this kind of plaster is that a larger percentage of the medicament is brought into contact with the skin, the amount of adhesive substance needed being so much smaller. In eczemas these plasters have been recommended for the treatment of the chronic infiltrated patches, and are often of much service when combined with white precipitate, salicylic acid, etc. Their usefulness is far greater in tuberculosis and in chronic processes with hypertrophy of the horny layer than in eczema.

Lassar's method of treating eczema, even in the acute stage, by means of baths may be mentioned, active remedies such as tar, chrysarobin, etc., being borne while in the bath without irritation. This method was supplemented by the use of ointments, pastes, etc., in the intervals when the patients were not in the bath.

In conclusion, it may be repeated that the writer's intention was merely to touch upon some of the methods of treatment that have been suggested of late years. The older, and in many cases more reliable, methods have not been mentioned. It is to be remembered that there is as yet no specific for eczema. That the regulation of the diet, attention to hygiene, and the removal of any conditions unfavorable to the general health, are of very great importance. Internal remedies are often of great aid, especially in the so-called nervous forms; and success depends in this class of cases more upon the general management of the patient's life, and upon moral influence and support, than upon topical applications.

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TEACHINGS OF THE OLD SURGEONS.

BY J. G. MUMFORD, M.D., BOSTON, MASS.

(Concluded from No. 14, page 337.)

Though heroic efforts in the way of amputations used to be made to save life, the number of limbs which was rescued from that last resort is surprising, when one considers the means then at command. It is interesting to read of Sir Astley Cooper's aborting many an inflammation by the use of steel and that new form of bark called sulphate of quinine. His favorite local antiseptic was a strong, hot, port-wine poultice, and where the skin was still sound, ice or hot applications were both highly lauded.

I do not wish to dwell too much on old surgical errors; they were common enough, but some of the teaching given in the systemic treatment of acute traumatic fevers seems almost inexcusable. The last-named authority says: "In inflammatory processes after septic wounds, all stimulating food and drink (though I must omit whiskey), should be avoided. The giving of them is a measure so absurd that a caution against it seems unnecessary; but lately an anatomist killed himself by taking wine to oppose the putrefactive influence of the matter he supposed to be absorbed." Tetanus, too, was constantly dreaded as an almost hopeless condition; and the universal panacea, bleeding, was admitted by some to hasten death. Amputation was thought as useless as was the general character of the infection well recognized.

Although the abdominal cavity was generally shunned as a *terra incognita*, still surgeons were perforce frequently entering it, the continual wars of old days making it a common field for traumatic surgery.

Le Dran states that he has many times resected the bowel for gunshot wounds, and that the safe practice is to make an artificial anus. When those viscera were uninjured, however, most writers of the last century unite in saying that speedy cure is to be expected, and that even when there are violent inflammations of the bowels with great distention, but no vomiting or hiccough, we may effect an easement and permanent recovery by the frequent use of salts and other cathartics. When the progress of the general inflammation is arrested but a local collection of matter remains, it should be withdrawn by aspiration, for the incision with a knife is apt to disturb the healthy gut and is almost invariably followed by death. In many cases in which the sound viscera are protruded through the wound they should be returned immediately to the abdominal cavity, then large and frequent applications of heat and moisture should be made to the belly. If the abdominal wound is to be enlarged, it should be opened downwards with the scissors, the fore-finger guarding the viscera; and when the bowels are to be handled by the surgeon, he must have his hands well annointed by some sweet-smelling oil in order that the viscera may not become excoriated and so subsequently adhere closely together. If the extended bowels are distended with gas so that they may not be returned without rupture, then the surgeon should aspirate off the wind as much as possible.

The best practice in closing abdominal wounds was that which satisfies many of us to-day. A double-headed silver or silk suture was to be passed from within outwards entirely through the parietes, and having drawn the peritoneum to overlapping, the stitch was firmly tied. Ordinarily drainage was thought of little value, as it could affect but a very small area. After operation the bowels were always to be kept open and loose in order that any tendency to an inflammation might be averted. The belly was to be firmly bandaged, which was often quite enough for the union of the wound even without the use of stitches. For the first few days the patient was to be kept on a low liquid diet with very little water, and the wound not disturbed. On the seventh or eighth day the stitches were to be removed and the diet increased. If there remained any discomfort or bloating, hot applications and cathartics were to be employed.

This was the teaching in the days of Louis XIV.

A great number of expedients were tried for repairing injured viscera, and, when the bowel was cut across or necrotic, resections were attempted, with occasional recoveries. The teaching was that in this work the glover's needle must not be used, but in its place a small, round, embroidery needle. Le Dran employed a fine looped suture in stitching the divided bowel; and the principle of this was not very unlike a continuous Lembert suture. It is evident that when this was drawn home the peritoneal surfaces would overlap. In all cases in which stitches were taken, the ends of the thread were drawn out at the abdominal wound and the bowel drawn up so as to be easily accessible should trouble occur, and that if necessary an artificial anus might be opened, which we are told most commonly would close of itself in the course of time.

An extremely interesting development of intestinal surgery, by the French surgeons of the last century, nearly two hundred years ago, was the use of some sort of plate or ring to reinforce the end-to-end suture. This was commonly a hollow cylinder of tallow, or some other soluble material, which was run into either end of the divided gut. The bowel being stitched over it, one or two stitches were run through to hold it in place. Le Dran says that it acts admirably and, as the intestines become adherent in from fifteen to twenty hours, it is easily permanent enough.

When the stomach and small intestine were wounded, nourishment by the mouth was to be entirely omitted for five or six days, and nutrient enemata resorted to.

Various signs are recorded for evidence as to the seat of injury. Thus, for wounds of sigmoid flexure, pain over the bladder; pain in the *yard* is indicative of wounded kidneys; for wounds of the liver pain in the right shoulder; and in these cases as there is probably extravasation of bile in the belly, the warning is to drain always. Here it is remarked that biliary fistulæ nearly always close of themselves.

A wounded bladder was to be sewed up always, were the rent intra-peritoneal, as the serous surfaces were known to adhere readily; but when the wound was extra-peritoneal, drainage was to be employed. Sir Astley Cooper said that a tendency to adhesive inflammation in the peritoneum was common and was the salvation of the patient in these cases; and for the free catharsis, so essential to drain away the inflammatory secretions, Epsom salts and calomel were most useful, given in small and frequently repeated doses.

Thus it will be seen that traumatic abdominal surgery was undertaken frequently, doubtless also with most frequent fatal results due to sepsis; but of pathological surgery in this region very little is said, except of drainage by aspiration, which was often employed. The usual cause for this operation was the presence of ascites or cysts. Sir Astley mentions an oft-quoted case recounted on a tombstone near Dartford, Kent: "Here lies the body of Ann Mumford, daughter of John Mumford, Esq., of Sutton Place in this Parish. Her death was occasioned by a dropsy, for which, in the space of three years and ten months she was tapped 155 times. She died the 14th of May, 1778, in the twenty-third year of her age, an example of patience, fortitude and resignation."

Cysts, too, were treated by the same method, though the possibility of their removal was considered, and Sir Astley proposed oöphorectomy though he never performed it.

I have seen no evidence that the vermiform appendix was regarded as a possible source of danger or as a factor in abdominal disease, before the present century; though one writer speaks of the gut strangulated by being enfolded in the vermiform appendix.

In view of the late developments of abdominal surgery, such teaching as I have cited is sufficiently striking to need no comment. *Sub sole, nova non sunt.*

When one considers the subject of tumors, in the light of old-time pathology, it seems futile to discuss the matter. Diagnoses were unreliable, and the distinction between benign and malignant tumors carelessly drawn; yet there were some operative measures which must interest the modern surgeon, and some sound precepts laid down which hold to-day.

Apparently benign tumors were cut out safely and without much ceremony, one would think; for we read of the common practice of removing chronic mammaries in the office, and sending the patient home. Lipomata gave little trouble, and even small goitres were removed by Cooper, though he recognized as do we, the danger of secondary hemorrhage after the removal of large goitres.

Students were, of course, constantly told to distinguish chronic mammaries from scirrhus; and Bell says that the benign tumor is very apt, in middle life, to degenerate into the malignant, and the excoriated nipple, which I take to be what we call *Paget's disease*, was regarded with great suspicion as a precursor of cancer. Another condition is described which seems to have been due to the neglect of the breasts in nursing mothers, in which quarts of fresh milk were sometimes stored in the breast by the blocking of a duct. "Drain this off and cream will rise," was the direction given. "It is not at all an abscess."

It has been understood for hundreds of years that some cancers were more malignant than others, according to their structure, seat and other conditions.

The best teachers of the last century held that caustics were to be eschewed, except sometimes in that variety of cancer of the face known to the ancients as *Noli me tangere.*

The scirrhus of the breast may sometimes be cured by the knife, it was said. By the best men it was thought useless to attempt cure unless breast, fascia and axillary glands were thoroughly removed; and Sir Astley Cooper adds that more than that, the skin over the cancer with the nipple and all the infected channels leading from the breast to the axilla, whether or not they appear invaded, must be thoroughly cleared away. Even so Le Dran says: "A cancer of the breast may be removed, but it will surely return, and more especially when it adheres to the pectoral muscle." He directed that the breast should be dressed with dry lint and a firm bandage. Benjamin Bell says that the extirpation of all the axillary glands is absolutely essential, and that when this is done it is well to make a counter-opening through the dependent skin flaps for seton drainage. He goes as far even as our most thorough operators of to-day, and says that one must clear off the pectorals down to the ribs; and rather hopelessly adds that if nothing else is gained by this, much severe, subsequent pain may be avoided.

Speaking of the mortality from the operation, Sir Astley Cooper says, in 1820: "Death from excision of the breast should never happen in these days. In forty-five years of surgical practice I have lost but five cases." He sums up by a statement on which we have improved but little, "That the complaint is in part constitutional and in part local."

Perhaps of all operations in the old days amputation of the limbs was the commonest. In the seventeenth and well through the eighteenth century, nearly all seriously injured members were amputated. The operation was almost always done for compound bone injuries, for opened joints and for gunshot wounds. As we come down towards the Napoleonic era, however, surgery, keeping pace with the great progress of the other arts and sciences, made a decided advance. Material for practice, too, was abundantly furnished by the great European battle-fields of those days; and when one reflects that for nearly one hundred years England alone was hardly ever at peace, we can understand how great must have been the increasing endeavor to save limb as well as life.

The conditions under which life might be saved were more thoroughly investigated, and we find a writer of Marlborough's time saying, "I have often observed that an amputation has more often succeeded, that is, a greater proportion of the patients have recovered, who have previously been considerably reduced than of such as have still remained in a full habit of body." A familiar example is that of a man long bedridden with a tuberculous knee, who, after an amputation through the thigh, regains health, strength and vigor with astonishing rapidity.

Towards the end of the last century, too, attempts were made to save limbs having joints disorganized by disease. The operation of Mr. Park, of Liverpool, in 1792, who excised the knee for white swelling was considered a most promising manœuvre.

M. Bilgner, the famous surgeon-general of Frederick the Great, was a strenuous advocate of what was then thought most radical surgery — the attempt to save limbs shattered in battle; and his teaching largely influenced the great Larrey. Even when Bell says: "An open joint means amputation," Bilgner says, "Try other means first," and Mr. Cline, Bell's contemporary at Guy's Hospital, removed successfully loose cartilages from the knee-joint, while in 1820 Sir Astley Cooper wrote, "The improved treatment of compound fractures renders it rarely necessary to amputate a limb for these accidents."

Long before the days of ether, surgeons began to look beyond mere speed in amputating; and the character of the stump as regarded its future usefulness was most carefully considered by Cooper. He followed the teaching of his predecessors in making long skin flaps, saying: "Don't cover the stump with muscles. They will retract and draw back the skin. Use skin only." He dressed his stumps with a light alcohol compress, and applied a tight roller bandage to immobilize the muscles. He seems to have frequently expected primary unions, for he directs that the dressing should not be disturbed until the eighth day, and that, pending that dressing, the temperature of the two limbs should be compared daily by the surface thermometer. Long before his day, he says, we learned to tie the femoral before amputating at the hip-joint, but he adds, that after forty-five years of hospital surgery, he never had but one successful case of hip-joint amputation.

The usual custom of those days, which I have seen once or twice in country districts in our own time, was to secure the large vessels with long ligatures, which were brought outside the wound for drainage.

The high mortality of hip-joint amputations was but little improved upon until within the present generation, if one may judge from reports scattered through surgical literature, the most startling death-rate recorded being that of the French during the siege of Paris, where, from September, 1870, until February, 1871, but one case of hip-joint amputation was saved.

There is one class of cases in which we have learned to amputate with greater freedom than did the old masters: in cases of gangrene they always waited for the line of demarkation, and in senile gangrene they did not believe in amputating at all.

Good genito-urinary surgery is as old as Hippocrates, and surgeons after the Renaissance got back to his standard. Stones and strictures were common enough, apparently, and were vigorously treated. It is an old French teaching that a distended bladder is best tapped above the pubes, though through the retro-prostatic area is a safe path for the skilled hand; and to that same hand only should be entrusted small sounds and catheters; for the tyro should employ none but the large-sized instruments. Says the often quoted Le Dran: "The great art is to have a kind of intelligence between the hand supporting the penis and that holding the catheter." His favorite treatment for strictures was by the use of compressible bougies which would swell after being placed. These were never left more than an hour at a time. He claims never to have damaged a urethra by this means.

In the same age and for many years later external urethrotomy was done for impermeable stricture; and Sir Astley Cooper mentions a successful case of urethroplasty from the skin of the scrotum. The same great authority advises strongly against tapping the bladder in all cases of complete retention from stricture, and makes it his rule invariably to do a perineal section.

Tumors of the scrotum and testicles received their share of attention, and most of all is hydrocele discussed. Probably the most famous hydrocele of the last century was Gibbons's, from which Mr. Cline, of Guy's Hospital drew off *six* quarts of fluid. Radical cures were, of course, sought by various means; the favorite with most writers being some form of alcoholic injection. Sir Astley used port wine, but adds that after all, the most satisfactory thing is to dissect out the tunica vaginalis and sew up the skin over the testicle.

The excision of malignant and scrofulous tumors was, of course, commonly done, and was considered an operation of great delicacy. Most especially does Sir Astley reprobate "that cruel practice of tying the whole cord with a broad ligature, which is now being properly abandoned by every good surgeon."

It is needless to go into the discussion of cutting for stone as practised by the old surgeons. The mechanical part of our present methods is but little changed, except that we now more often employ the supra-pubic route. Attempts were frequently made to remove stones per *vias naturales*, but it was reserved for our own Bigelow to render that method practicable.

If there is any one surgical procedure of those days which is conspicuously absent from our own practice, it is that of bleeding. As we know, this was not by any means limited to phlebotomy, but both arteries and veins were opened; and cupping and leeching were employed according to the special complications.

It would be futile here for me to go into the question of blood-letting as it was discussed by our fathers, the point of most interest being to inquire how judiciously it was employed, and how far from indiscriminate was its practice.

In this connection Baron Larrey says: "It is a great and sometimes fatal mistake to bleed immediately everybody that has had a fall or received an injury. Such bleedings augment the state of collapse and frequently deprive nature of the few remaining resources to re-establish the equilibrium between the enfeebled vital forces."

Sir Astley Cooper, too, bled "sparingly and with great caution for fear of impairing the reconstructive powers." He "especially avoided bleeding in compound fractures." "The one indication for bleeding" he said, "is a *hard* pulse, no matter what its rate or volume."

In cases of tetanus, in which the classical treatment consisted of opening the vein in a warm bath, he vehemently asserted that both the bath and the hemorrhage did great harm, and that bleeding in lockjaw hastens death. Here, as in other infectious conditions, he used opium; and, after the favorite method of moderns, he said, "In giving opium, use small and frequently repeated doses. Large doses nauseate and the effect is more transient."

Men differed much about their methods, and Larreys's assertion that general blood-letting is preferable to leeching would not altogether commend itself to us. His reason was that leeches, so far from dispersing the inflammation, increase it and invite an attack of gangrene.

Perhaps the most logical and frequent use of bleeding was in the case of head injuries, and in this respect I believe we might learn an occasional lesson. In all head injuries in which there was obvious brain compression, not only were ice caps and cathartics resorted to, but free bleeding, especially from the temporal artery, was the rule.

It would be an endless task, too, to go into the subject of complications of injuries. The treatment of gunshot wounds, for instance, was a matter of constant surgical warfare; the main contention, then as now, regarded the infectiousness of bullet and punctured wounds. Larrey says, "Enlarge and drain all punctured wounds"; and in another place, "Don't touch gunshot wounds, but dress them and leave the dressing undisturbed until the seventh, eighth or ninth day." And Bell says, "Do not needlessly and for a long time explore wounds for bullets or other foreign substances." Indeed, nearly all of the best old authorities agree in leaving alone inaccessible bullets.

Benjamin Bell's treatment of bruised and sprained joints, too, reminds one strongly of the best treatment of our own days: "In severe sprains first plunge the ankle into very cold water. In the subsequent treatment use frequent hot and cold bathings, showering from a height; then rubbings with emollients. A flannel bandage should be constantly worn, carried smoothly and spirally from the toes to the knee." And Cooper says that, in these injuries, when there is much undispersed inflammatory exudate, we should use electricity to absorb the indurations, but the best of all are mercurial ointments and friction.

One might go into the discussion of the treatment of gangrenous quinsies, by which is evidently meant diphtheria, of the value and abuse of tracheotomy, of the nerve and tendon suture, of the treatment of aneurism, and similar subjects almost without end; but, fascinating as such research and inquiry becomes, it would lead us too far afield for the purposes of this essay.

Such an article would be incomplete, however, without some further reference to head injuries, a subject of great controversy in the pre-antiseptic days, and dreaded equally with wounds of the joints and abdomen. We know that the custom of trephining is very ancient, not only from our own literature but from Mexican and Egyptian remains which are many hundreds of years old; but leaving that aside, the practice of more recent days touches us most nearly.

It was early recognized that skull fractures were not in themselves dangerous when not compound, though the extent of the fracture in such cases was impossible of determination, and a fact is emphasized which even with us has been seldom mentioned, namely, that a blow on the vault may produce a crack entirely encircling the skull.

We know how the practice of trephining fluctuated from time to time, according as one school or another became prominent and popular. Through the last century English surgeons and many French surgeons trephined constantly, but it was the teaching of the French army surgeons, especially of Larrey, which gradually brought about a change.

Larrey said, "Trephine for evident cause — for splintering, depression or effusion causing compression symptoms"; and Cooper adds, "Trephining for concussion is now completely abandoned; however, in obvious cases trephine, but not through the uninjured dura." More than fifty years earlier Le Dran had taught to explore thoroughly all wounds of the scalp and to trephine punctured fractures. He had a sure instinct for surgical cleanliness, and insisted that the head must be thoroughly and entirely shaved to avoid clotting the hair with blood, and consequent fouling of the wound. He also said that in all head injuries, and more especially when the skull was opened, thorough drainage should be instituted. The most frequently employed treatment for pressure symptoms was general bleeding, as I have said; all the old authorities insist upon it, and cite many cases in which it was obviously of benefit.

Hemorrhage from the meningeal arteries was checked, however; the most highly lauded hemostatic being the actual cautery.

Baron Larrey seems to have recognized the advantage of thoroughly draining the base to prevent pressure symptoms, for he describes the case of one Nicholas Baumgarten, a private, who received a fencing thrust through the orbit which did not injure the eyeball. At once a copious draining hemorrhage came on and persisted for a day or two, so that there were no pressure symptoms, and the man did perfectly well. Later the orifice became plugged, compression of the brain developed, and the man died on the fourth day.

He cites another case of undoubted fracture in the middle and posterior fossæ. A cavalry officer fell from his horse upon his head. There was immediate coma, with profuse hemorrhage from the ears and mouth, which was allowed to persist. After two or three days large ecchymoses developed behind the mastoids. Treatment consisted in supplementing the depletion of the brain by opening frequently the external jugular veins and occipital arteries. The man recovered.

In view of our recent advances in cerebral surgery this case is full of interest.

We know that shrewd guesses at cerebral localization had been made before Larrey's time. He himself notes that "in injuries to the cortex cerebri by pressure the intellectual faculties are impaired; in injuries to the base and ventricles there are paralytic phenomena, but not intellectual." Also that "in extensive injuries to one hemisphere the opposite limbs are paralyzed; therefore even in old cases operate for the removal of pressure on the opposite side."

Speaking of the phrenologist's bump of amativeness over the occipital protuberance, Larrey notes the peculiar physiological effect of traumatism in that region, and relates several cases of gunshot injury to the back of the head followed by impotency and atrophy of the testicles. He speaks with a note of admiration also of the reverse process, telling of castrati who have lost their bumps.

A further fact which became well recognized in the last century was that "considerable portions of brain matter may be lost and, if there should be no inflammation, life and even the functions are not jeopardized."

The old field-surgeons were, of course, well accustomed to seeing very serious brain lacerations in battle as well as resulting herniæ cerebri. Larrey recognized the uselessness of attempting their reduction or excision, and states that the real source of the trouble is swelling of the brain itself for some cause. He recommends constant lime-water applications with strapping.

Le Dran asserted that when a bullet was obviously lodged in the brain, it could be safely probed for with an elastic catheter, and removed if found.

In connection with the practice of chiselling out bone flaps instead of trephining, another statement of this surgeon is striking. He tells of a skull from which a large slice had been cut by the glancing stroke of a sabre. The bone with the overlying soft parts had remained hinged to the skull by firm attachments, had been replaced and had thoroughly reunited, leaving only a thin cicatricial line of union, with no loss of substance.

Many other branches of surgery prominent in the modern schools I have omitted: ophthalmology, laryngology, gynecology. These are comparatively new studies. This short sketch of a subject so broad and a literature so voluminous is obviously not intended to be a rigorous critique, but rather a selecting out of some little of the notably sound work, leaving it for us moderns to compare it with our own; to show how good those ancient men were, not how much better we have become.

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THE GONOCOCCUS.

BY HENRY DEXTER CHADWICK, M.D.,
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(Concluded from No. 14, p. 341.)

A STUDY of the diplococcus which was so often met with in my series of cases showed it to have the following characteristics:

Biology. — After twenty-four hours in an incubator there appears on the surface of the agar round, white dots having a faint yellow tinge, semi-translucent, varying in size up to half a millimetre. After another twenty-four hours the colonies will have about doubled in size, lying slightly elevated from the surface with a sharply defined circular outline. The colony is thicker in the centre, and the very slight moist appearance on the surface produces a pearl-like lustre as seen in reflected light. By transmitted light the colonies are semi-translucent, and the thicker central portion appears a darker yellow tinge. The colonies show but little disposition to become confluent so that the development in size of the individual colony depends on the number present. With only two or three present in a tube, they may become three or four millimetres in diameter after several days; and as the growth begins to dry first in the thinner circumference of the colony, the edges become somewhat scalloped, and the regular rings which represent successive periods of growth encircle the central point which was the original colony. With a low power the colony is seen to be made up of very fine, slightly yellow granules closely packed together. On gelatine plates the diplococcus begins to be seen about the third day as minute white points. They do not liquefy the gelatine, and therefore remain on the surface. Very minute colonies develop below the surface, which grow very slowly. The color and appearance are the same as when grown on agar.

Stab cultures show development along the length of the needle track in very fine white colonies, giving a granular appearance to the growth. There is but little tendency to spread over the surface adjacent to the puncture.

On potato, growth was noticed in from three to four days as faint lines, nearly the color of the medium on which it was growing. Later, as the colonies become dry, they are almost a pure white, as on all other media. When grown on the potato there is considerable variation in the size of the organism. When grown in milk the casein becomes coagulated in twenty-four to thirty-six hours. Beef serum and hydrocele fluid were tried, and the diplococcus developed equally well on each, having no characteristic growth. It stains readily by all the analine colors, and is not decolorized by Gram. This diplococcus does not produce gas. It produces acid, as was demonstrated on litmus agar and in milk. It is anërobic, but will grow slowly under mica. Non-motile.

Pathogenesis. — A culture from a case of gonorrhea of several days' duration was made on agar, and transplanted into acid bouillon and incubated for forty-eight hours. The diplococcus developed rapidly, causing a clouding of the bouillon with sedimentation. A small quantity of this bouillon was injected into the vagina of a bitch, having previously slightly scarified the mucous membrane. Three days later there was a very slight muco-purulent discharge, which continued to increase in quantity, and the swelling and inflammation of the vulva became greater during the following ten days. No cultures were made until the tenth day, when one was taken upon which numerous typical white colonies of diplococci developed. These were identical in appearance and morphology with the organism used for inoculation. Cover-glasses of the pus showed an occasional cell containing a number of diplococci about two-thirds the size of the gonococcus as found in man. Cultures taken at intervals for six weeks showed the characteristic diplococcus, which decreased in number after the third week, as the inflammation subsided. Many other bacteria were present in the latter part of the disease. A culture from blood taken from the ear during the fourth week proved sterile. A pure bouillon culture obtained from this bitch during the second week was injected under the foreskin of a bull-dog. In this case no attempt to scarify the parts was made, but on the contrary, care was exercised to avoid any abrasion or injury to the tissues. Cultures taken on the third day after inoculation showed a few diplococci. The purulent discharge increased in amount from this time for about two weeks, when it was very abundant and accompanied by considerable inflammation of the parts, which appeared to cause the animal some discomfort. The discharge then gradually lessened in amount and the inflammation subsided. Cultures made at intervals always showed a diplococcus like the one used for inoculation. Cultures of the blood taken from the ear, which was cleaned well with alcohol, showed numerous diplococcus colonies identical in cultural peculiarities and morphology with that from the urethra. Both would stain by Gram. One week later a culture from the blood taken in precisely the same way proved sterile.

A bitch was then inoculated in the same way as dog No. 1, with a culture of diplococci from a gonorrheal case grown on an alkaline medium. No purulent discharge or inflammation followed. A fourth dog which had not been inoculated was found suffering from severe purulent discharge. Cover-glasses were made, but in none of them was a satisfactory specimen obtained, on account of the quantity of extraneous matter included with the pus. Cultures showed several colonies of a small diplococcus, apparently the same as has been described. In this case also, blood cultures from the ear were made, and an organism similar to the urethral diplococcus was found. In following out this diplococcus, which was at first considered to have been contained in the blood, cultures were made from the blood of a patient suffering from an acute gonorrhea of six days' duration, with positive results. One week later another culture taken from the ear as before, failed to show any growth.

Another case of gonorrhea of four weeks' duration, from which blood cultures were taken, failed to develop.

One case, also of chronic synovitis of the knee-joint, in which no history of gonorrhea could be obtained, failed to develop any growth on the blood cultures. A culture was then made from the deep layers of the skin on the arm of a healthy person and a very few white colonies of the small diplococcus developed.

Whether or not these skin diplococci are identical with the urethral diplococcus, I am not prepared to say, as the colonies were often moister in appearance, and some were of a faint bluish cast, instead of white or yellowish tinge — a very slight difference which might have been accidental. There was not time to follow this through all the culture media. Their appearances in cover-glasses were the same, and both would stain by Gram. A large diplococcus, which was obtained from the superficial skin in one instance, had a distinct yellow colony. These stained by Gram, and were often seen in groups of four, like tetrads.

In regard to the diplococcus which appeared in the blood cultures, it would be impossible to say it did not come from the skin, and the same objection could be raised against all the published reports in which observers have stated that the gonococcus had been found in the blood. The only way to avoid this chance of error would be to take the blood from the bottom of a deep incision or from a vein. From the results obtained in this series of cases, it is apparent that Turro's investigations could not be confirmed. Although a small diplococcus was found in most of the cases, it was not the gonococcus for the following reasons: First and most important, is the fact that they could not be decolorized by Gram, while the gonococcus is decolorized very rapidly. Second, their arrangement and size was very much like that of a staphylococcus, and groups of four were seldom seen. Their small size makes them easily mistaken for cocci when stained deeply. The diplococcus appearance was found to be best shown in cultures not over forty-eight hours old, as degenerative changes occur about that time. These should be stained in a very pale watery solution of methylene-blue (three or four drops of the alcoholic solution to a watch-glass of water) for thirty to forty seconds, after which it is important to wash very thoroughly. Third, it was found that the diplococcus would grow luxuriantly on all common neutral media as well as on acid material. Fourth, although the results obtained on dogs were positive, this fact would seem to be negative evidence as regards the gonococcus, for all observers, excepting Turro, have claimed that dogs were immune to gonococcus infection, and attempts to produce the disease with pure gonorrheal pus have not been successful. The fact that a purulent urethritis is produced by a diplococcus is not of itself proof that the disease is gonorrhea. Fifth, Finger states that the development of gonococci is favored if the culture media or tissue is alkaline in reaction, and points out that although the mucous membrane of the urethra is usually bathed in an acid fluid, it will under conditions of sexual excitement pour out an abundant secretion from the glands and follicles, which neutralizes the previous acidity. Any condition, therefore, which tends to produce an alkaline secretion, either from long sexual excitement or alcoholic stimulants, serves to furnish material most favorable for infection and gonococcus growth.

In the cases of gonorrheal ophthalmia, for instance, where infection is usually very virulent, the eye is bathed constantly in the lachrymal secretion which is alkaline or neutral in reaction. In connection with the diplococcus above described, it is interesting to note that Bockhart (1886) reported 14 cases of urethritis, which he found were caused by a very small diplococcus and an ovoid streptococcus.

The only result which tends to confirm Turro's announcement which I have found, is a report by Ghon and Schlogenhaufer. They wished to try cultures on acid material, and so prepared for this purpose a medium composed of two parts agar and one part fresh acid urine. In this material a culture of gonococci was obtained, with which they produced a urethritis in a healthy man and gonococci were found in the discharge.

In my series of cases, large diplococci in colonies of varying shades, yellow and pink, were met with several times. These organisms were about the size of the gonococcus, which they resembled very closely in form and arrangement. None of them, however, would decolorize by Gram's method. The most common bacterium present, aside from the small diplococcus, was a small coccus producing yellow colonies, and resembling the staphylococcus pyogenes aureus in appearance and arrangement. Once an organism having the characteristics of the bacillus fluorescens liquefaciens was observed. Besides the bacteria already mentioned, there were a few other bacilli and cocci which were occasionally found. The inference to be drawn from this work is that the gonococcus will not grow on acid media; and in reviewing the results obtained by all the different investigators, we must conclude that the gonococcus is a strict parasite, having a very slight power of saphrophitic growth. Until some better method of cultivation is found, a positive diagnosis of gonorrheal infection is impossible in many cases, as was made evident from the investigations of Lustgarten and Wannaberg (1887), who found diplococci in healthy urethræ which were identical with Neisser's gonococcus in appearance and reaction to Gram's stain. These diplococci were also found in epithelial cells; and as these organisms may exist within the urethra, they may be taken up by leucocytes and closely similate gonococci. After their results were published, a pupil of Neisser, Steinschneider, admitted the possibility of error in about five per cent. of all cases. Lustgarten thinks it even greater, and says the principal distinction between the gonococcus and this normal organism seems to consist only in the fact that in gonorrhea this diplococcus is found in larger numbers and in masses with but few other organisms present, and concludes that in a case of chronic gleet it is impossible to decide whether it is of gonorrheal origin or not, and that even with the microscopical examination one must rely on their clinical experience. In cases of vaginitis even greater doubt is thrown on the presence of the gonococcus, since Bumm and many others have found the presence of diplococci not to be differentiated from the gonococcus in the vaginæ of healthy females. By summarizing all the well authenticated work on the subject, we conclude as follows:

That the gonococcus of Neisser undoubtedly causes true gonorrhea, but to make a certain diagnosis of this organism it must be found in considerable numbers and these arranged in groups within the leucocytes. They must also decolorize very readily by Gram's method of staining. In cases where but few scattering diplococci are found and most of those outside the cells with other bacteria, a diagnosis of gonorrhea is not justifiable; particularly is this the case in the vulvovaginites of children.

METHODS OF STAINING THE GONOCOCCUS.

(1) Place cover-glass after fixing in Löffler's methylene-blue, five minutes.

(2) Wash in dilute acetic acid (one drop to watch-glass) one to three seconds.

(3) Wash, dry and mount.

The nuclei are found stained blue, but the protoplasm and cell outline are hardly visible, often making it impossible to say whether the diplococci are within the cell or not.

NEISSER'S METHOD.

(1) Stain cover-glass with saturated alcoholic solution of eosine, thirty to forty-five seconds.

(2) Drain off excess with filter paper.

(3) Stain the unwashed cover-glass with saturated aqueous solution of methylene blue.

(4) Drain off excess with filter paper.

(5) Wash, dry and mount.

The result shows outline of cells distinctly, with their protoplasm stained pink, the nuclei blue and the bacteria a darker blue. Gram's reaction should be always used to make diagnosis doubly sure.

GRAM'S METHOD.

(1) Analine water, gentian violet, three to five minutes.

(2) Iodide iodine solution, one to two minutes. (Iodine one gramme, potassium iodide two grammes, water 300 cubic centimetres, mixed.)

(3) Rinse off stain in alcohol.

(4) Dry and mount.

The gonococcus when treated by this method is decolorized almost instantly when rinsed off in 95 per cent. alcohol, five to ten seconds at the most being the time necessary for complete decolorization.

Note. - Since this paper was written an elaborate article on the gonococcus has been published by Dr. Henry Heiman, in the *New York Medical Record* of June 22, 1896. After trying various culture media on which different observers have cultivated the gonococcus, he decides that pleuritic fluid, plus two per cent. nutrient agar, plus one per cent. peptone, gave the best results. He attributes the superiority of pleuritic fluid over other serous effusions or blood serums to the fact that it contains more albumin. The gonococcus would grow readily and could be transplanted on this medium. His work was confirmed by positive results on the human urethra. He believes that the diplococcus described by Turro was not the gonococcus, as none of the diplococci which he was able to grow on acid media would decolorize by Gram. Heiman's study of the bacteria of the normal urethræ and the healthy vulvo-vaginal track is very important, for although he found several species of diplococci, none of them would decolorize by Gram and concludes that the gonococcus is never present in healthy mucous membrane and that it can always be positively differentiated from other diplococci by the Gram method.

Reports of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

TWENTY-FIRST ANNUAL MEETING, BOSTON, JUNE 5, 6 AND 7, 1895.

(Concluded from No. 14, p. 349.)

SECOND DAY. — MORNING SESSION.

Dr. James J. Putnam, of Boston, read a paper on

HYPEROSTOSIS CRANII (CEPHALOMEGALY), WITH ILLUSTRATIONS.

Case I. Swedish woman, twenty-eight, married. No sign or history of syphilis or other constitutional ailment. Mother and sister both suffered greatly with their head. Not sure that they had hyperostosis. Patient thinks trouble dates from a confinement nine years ago when she was subject to drowsiness, headache and pain in ears and eyes. Teeth began to fall out; hair finally lost. Pain in head increased. Broadening of head and prominence of eyes then noticed. For past five years has been getting dark and discolored. Sight poor in one eye. Opacity in one lens. Double facial paralysis, due to obliteration of the facial canals.

Case II. Young man, eighteen. When five, he fell and injured himself slightly, and it was thought that this gave rise to the trouble. His head was shaved when examined, and his brother said the two hyperostoses were present which afterwards became the dominating feature of the disease. At eighteen, when I saw him, he was totally blind and deaf. Head somewhat deformed. These two hyperostoses had become excessively large, and merged into a diffuse enlargement of the whole head. I followed him until his death, five years later. Chief symptoms: headache, loss of the special senses, and finally staggering gait. He had epileptic attacks occasionally, from the onset of the disease apparently.

Case III. Patient shown. First seen three years ago. Then fifty, married, in provision business. Healthy previous to present illness. Head had been growing larger ten or twelve years. Neuralgic pains recurring at short intervals and in various parts of the head especially troublesome, at time attended with nausea and vomiting. Eyesight good, but hearing poor a number of years.

With reference to the pathology, it was Virchow's idea that the origin was inflammatory, generally originating in some injury or inflammation of the skin, one of the cases having come on after an attack of erysipelas, another after suppuration of the tear-passage. It was, however, noticeable that the disease, as a rule, began in youth, sometimes in infancy. As suggested by Baumgarten, the suppuration of the tear-passage might be the result, not the cause, of the disease of the bone. In Dr. Starr's case the changes in the soft parts suggested that in one type of these affections there might be something of the nature of a general dystrophic change besides the alteration in the bone. The tendency to overgrowth of other parts of the body seemed to increase the probability that we had to do with a general process.

Dr. Prince, of Boston, spoke of a case in which the symptoms apparently followed injury to the forehead. The symptoms were very similar to those of cerebral tumor. There was a large protuberance confined to the frontal bone. Parietal bone enlarged. Operation advised against. The autopsy showed that it might have been feasible to relieve the pressure by operation. This probably was an exceptional case. There was no history of syphilis.

Dr. Hammond, of New York, mentioned a case in which there were five or six enlargements, and the skull was fissured in all directions. The bones, whereever they could be felt, showed enlargements and nodosities, and it was probable that the same cause produced the structural changes in the bones of the skull and in those of the skeleton. The patient had had syphilis.

Dr. Charles K. Mills opened a discussion on

CORTICAL LOCALIZATION IN THE LIGHT OF RECENT RESEARCHES INTO THE MINUTE ANATOMY OF THE CORTEX.

He said that the different theories as to the separate cortical localization of movements and of cutaneous and muscular sensation, which had been the subjects of so much controversy, have again become prominent in the light of the researches founded upon the methods of Golgi, and particularly those made by Ramon y Cajal, van Gehuchten, Schaeffer, Andriezen and others. Those who contend against the doctrine that the Rolandic cortex is a purely motor region believed they there received additional support for their views. The varying hypotheses with reference to the functions of the cortex were reviewed. He held that, as shown by Forell and Manson, we have been too long handicapped by prevailing ideas of cell action, and by theories of the parts played by the cell bodies as originating centres. Impulses are transmitted and transferred by processes as well as by cell bodies, and the function of the latter is chiefly trophic. The new researches and theories, he believed, did not compel an abandonment of former views as to special localizations, although different standpoints might need to be taken. Disregarding theory entirely, he believed that the subdivision of the cerebrum into physiological lobes — higher psychical, motor, sensory (meaning for the representation of cutaneous and muscular sensations) visual, auditory, olfactory, gustatory and naming — remained for the practical purposes of the physician and surgeon the best. While the whole of the cortex in some of its strata may be regarded as a sensory expanse, its Rolandic portions, and particularly the convolutions cephalad of the central fissure, constitute a region which is related to specialized movements of various parts of the body. One calls it motor, another kinesthetic, another sensory-motor, and another executive; but for the purposes of the physician and surgeon it is a motor sphere, the irritation of which causes specialized movements, while its destruction impairs or abolishes these movements. It is as much the area where the motor portion of the great sensory-motor arc begins as where the sensory portion of it ends. He did not believe with Andriezen that it was necessary to regard the ambiguous and great pyramidal cells of this region whose apical processes received the terminals of the fillet radiations as the first sensory cells of the cortex. Indeed, he regarded it as important to rid ourselves entirely of the idea of sensory cells and motor cells. The cortex contains localized areas in which are found cells that might be of the same kind, although cells of a peculiar type may prevail in certain portions of it. To abandon separate sensory and motor localization would, he believed, necessitate the abandonment of visual auditory, gustatory and other subdivisions of the cortex. The cerebro-sensory area — that is the area of representation for skin and muscle sensations — both cortical and subcortical, would be, from his point of view, that part of the cerebrum where the fillet radiations concerned with these sensory excitations in their most compact forms, are nearest to the surface of the brain, and therefore this region might continue to be destroyed as it had been by him, as in the postero-parietal, quadrate and fornicate convolutions. Destruction of this region, especially if bilateral, caused more or less permanent loss or impairment of sensation. He referred to cases reported by Savill, Sharken, Starr and McCosh and himself as confirming this view. In the cerebrum as in the spinal cord were fields of junction between the various so-called cortical areas and lesions of these fields of conjuction, or at the terminations of the sensory projection, fibres might give rise to temporary sensory phenomena, as might also lesions anywhere in these fields of conjunction; but persistent sensory disturbances were found only when the lesions involved the convolutions included by him in the general sensory area. The somewhat numerous contradictory cases were capable of reasonable explanation.

Dr. Dana, of New York, said that he still held to the view that the motor and sensory functions were practically united. He could not explain the clinical and pathological facts upon any other hypothesis. Upon removing a section of the pre-central convolution, tactile anesthesia and muscular anesthesia with paralysis followed, which he thought pointed to the union of these two functions in that spot. Such cases were numerous. He had directly irritated the motor cortex and produced sensory disturbance associated with motor disturbance. The whole weight of clinical evidence, the surgical operations, the tumors, the softenings, indicated that these two functions were essentially identical anatomically. He did not think that Dr. Mills's theory that the centres for visual, auditory and gustatory sensations were separate, held against actual facts. The visual sensations were not so closely related to motions as were the cutaneous and muscular sensations. For the performance of coördinated movement we must have a very close relationship anatomically between the muscular and cutaneous sensations. He agreed with Dr. Mills that sensations were not closely localized.

Dr. Putnam, of Boston, thought that the convolutions in advance of the fissure of Rolando, the function of which we ordinarily associated with localized movements, had also to do with sensation. He believed that the function of sensibility was very widely distributed. He thought it was interesting to remember that a sensation would make its way from a minute portion of the spinal cord that was left; and in the brain, if one channel was cut off, it would make its way into other channels. We knew that nerves would stand a high degree of injury, sufficient to destroy their motor functions, without interfering materially with their sensory functions. The same was true in the cord; a minute portion of it would convey centripetal impressions. Sensibility would seem to be rather peculiar in the fact that it is almost always related to something else. A sensation was felt almost always for the sake of something else.

Dr. Starr, of New York, said we were positive that a lesion of a limited area of the so-called motor zone did inevitably produce in almost every case more or less disturbance of sensation. He considered that he was mistaken in 1890, when he maintained that sensations were received only behind the fissure of Rolando. He believed with Dr. Dana that there were disturbances of sensation produced by small lesions anterior to the fissure of Rolando, that the sensory area of the body corresponded exactly with the motor area, so far as we could determine clinically. Dr. Starr referred to the address of Flechsig, in which he showed that in the course of development there were two distinct and separate periods of development to be traced in the embryo in the cortex; the first period in which there were formed projection tracts of different kinds, the so-called motor tracts, and sensory tracts of distinct kind, visual, auditory and olfactory and also tactile. The latter were distinct and separate from the motor and terminated in areas of the brain separate from the motor and posterior to the fissure of Rolando. Flechsig showed that the second stage of the development of the cortex was an enormous development of association fibres, separate and distinct in the life of the child, because it was only when these fibres began to develop that evidences of the combination of the various sensory memories were shown in conscious intellectual acts. He thought the solution of these apparently contradictory facts was found in the diffusion of sensations. From the Cajal and Golgi methods of staining we knew that the sensory fibres did not terminate in a distinct sensory cell, but in brush-like expansions. Diffusion of sensibility, he thought, explained the fact that in a few cases we got loss of sensations alone, while in the vast majority of cases sensation and motion were lost together. He thought we should come finally to the fact that a cell was to be regarded more as a trophic centre than as a motor or sensory cell.

Dr. Dercum, of Philadelphia, said that to his mind the various centres of the cortex, as we knew them clinically and pathologically, were simply highways of ingress and egress to the general cortex. General biological considerations also would negative the sharp differentiation of cells into special functions. Nerve protoplasm reacted to certain forces; and to say that one cell would react to one mode of motion and another to another, was to his mind unphilosophical, and not borne out by general biological considerations.

Dr. Prince, of Boston, said that a great many cases could be mentioned where excision of a portion of the cortex had not been followed by loss of sensation. He thought if the word centre had any meaning, it must mean a portion of brain the function of which was destroyed when taken away. He did not know how to explain the cases alluded to by Dr. Dana, but they might possibly be explained in this way: that the disturbances occasioned by a lesion in the brain may be secondary, perhaps due to edema or local congestion. We knew that in injury to the hand, for example, the local phenomena were not strictly limited to the seat of the pain; we might have swelling of all the neighboring parts. He did not see why the same might not be true in the brain.

Dr. Knapp, of Boston, said he thought the whole of our knowledge of the neuron went to show the very pronounced dependence of the motor neuron upon the sensory neuron. In the primary neurons it had been clearly proven that the terminal processes of the axis cylinder of the sensory neuron were closely connected with the apical processes of the motor neuron in the cord. Recent studies in the development of the fibres in the brain itself showed that the sensory tract passed distinctly upwards toward the central convolutions rather than downwards and inwards toward the gyrus fornicatus. In other words, the higher sensory neurons must either pass upward directly to connect by their axis-cylinder processes with the cell bodies of the motor neurons, or there must be associated tracts from these axis-cylinders going up to the motor neurons. Now, we found no association tract passing up from the gyrus fornicatus to the central fissures. The positive cases of sensory disturbances following lesions behind and in front of the fissure of Rolando were increasing in number. The positive cases of lesion in the neighborhood of the gyrus fornicatus were very few.

SECOND DAY. — AFTERNOON SESSION.

Dr. E. D. Fisher, of New York, read a

REPORT OF A CASE OF TUMOR OF THE CEREBELLUM, WITH AUTOPSY.

Dr. George J. Preston, of Baltimore, described

CASES OF BRAIN TUMOR.

Dr. George L. Walton, of Boston, considered the subject of

PRESENTATION OF A BRAIN TUMOR.

The main interest of the case was the question whether operation might have proved successful. Mr. H., aged fifty-three had complained of headache, frontal, only two months before death. The preceding symptoms were attacks of vertigo and loss of speech with several general convulsions, aphasia, agraphia, right hemiplegia and right hemianopsia. Double optic neuritis and loss of superficial reflexes on the right side. Autopsy: tumor surface two by one-and-a-half inches, occupied the angle between the Rolandic and Sylvian fissures. Extension forward under the healthy cortex reached beyond the transverse frontal sulcus. It was fairly well defined, but with no distinct capsule. The centre was necrotic. The symptoms suggested so extensive infiltration that operation was considered to offer small hope, but the extension backward was not so great as the hemianopsia would indicate, a fact which together with recently published cases of removal of large gliomata would lead perhaps to a somewhat more hopeful prognosis in another case of this nature.

Dr. Starr, of New York, mentioned briefly a case of infiltrating glioma of the left hemisphere in the hand and arm area of the motor zone. No history of blow or of syphilis. Symptoms developed gradually in the course of a year. They consisted of, first, headache; second, gradually increasing optic neuritis; and, third, localized spasms commencing in the right hand and arm, associated with a moderate degree of anesthesia. No disturbance of muscular sense. A mild condition of motor aphasia developed. Operation by Dr. McBurney. On exposing the brain an extensive infiltrating glioma was found. It had no capsule, was very vascular, the merest touch causing hemorrhage into the substance of the tumor. The wound was closed. The man died that night from hemorrhage from the finer vessels through the tumor. In exposing the brain the gouge and chisel were used instead of the trephine, which was a slower method. The fact brought out by Dr. Fisher's case, that the position of the pain gave no clue to the position of the tumor, had been confirmed by every collector of cases since 1880.

Dr. Dana, of New York, thought the use of the chisel upon children and infants was a bad method. He thought that with the electric saw as now perfected much better results could be obtained. Dr. Powell, of New York, had now operated with the saw in twenty-five cases of idiocy and epilepsy with only two deaths, a mortality lower than that of any other surgeon.

Dr. Jacobi referred to the method of lumbar puncture and removal of cerebro-spinal fluid for the relief of headache in cases of brain tumor. The puncture was made between the second and third lumbar vertebræ, and was as easy as thoracentesis. About 20 to 40 c. c. of cerebro-spinal fluid were withdrawn. While the fluid was flowing the pain increased, but after the removal there was relief for forty-eight to seventy-two hours. The puncture could be repeated at intervals of three or four days.

Dr. Collins, of New York, called attention to the fact that in operating with the chisel the pulse would sometimes go as low as twenty beats, following several blows in rapid succession. In one instance the patient's condition became such that artificial respiration was resorted to and ether substituted for chloroform.

Dr. Hammond, of New York, said that Dr. Powell had operated with his electric saw on seven cases for him, six infants and one adult. The infants varied from one to seven years, and the adult was twenty-two. The saw as now perfected worked admirably. The whole operation required not over twelve minutes. He did not think, however, that the saw would be adapted to incisions other than the straight-line incision.

Dr. Dercum, of Philadelphia, had also observed slowing of the pulse from the use of the chisel, which he attributed to inhibition from irritation of the dura.

Dr. Fisher, of New York, said that while there might be some disturbance of the circulation from the use of the chisel, the after-effects did not indicate much cerebral shock or concussion.

Dr. C. Eugene Riggs, of St. Paul, read a paper on

INJURY OF THE LEFT ANGULAR GYRUS.

Dr. Charles L. Dana, of New York, followed with

A CASE OF HEREDITARY CHOREA, WITH AUTOPSY.

The patient, a peddler, was thirty-seven at death. His great-great-grandmother had chorea at the age of thirty, his great-grandmother at thirty-two, his grandmother at thirty, his mother at thirty; he himself began to suffer at thirty-three. The patient, before symptoms developed, was of good intelligence and of strong physique. Symptoms began with peculiar twitching movements of the face, a peculiar gait and some weakness mentally. About two years after the onset of symptoms he was obliged to enter the hospital. He was then in good physical health aside from his special trouble. He presented the usual physiognomy of a case of hereditary chorea, had a peculiar high-stepping gait, twitchings of choreic character in the face, peculiar disturbance of articulation, and a slight degree of dementia, which gradually progressed. He was once in the course of the disease trephined, and for several months seemed distinctly better, but soon relapsed into his former condition, and the disease progressed. The patient continued without much change in his condition except that he grew more demented until he had had the disease about five years, when he died from an intercurrent attack of typhoid fever. In examining the brain there were few peculiarities which could be considered of significance. There was interruption of the fissure of Rolando by a bridging convolution which was rare. There was also absence of Dercum's convolution. He also made a series of measurements of different parts of the cortex with reference to the relative thickness of different areas. In the microscopical study of this brain he was not able to use the recent methods of staining. The brunt of the disease in this process was in the sensory motor cortex and in the pyramidal area of that cortex, although all of it was to some extent affected. His conclusion was that in these cases the defect was a teratological one, that these people were born with brains bound to become senile, and atrophy at an early age in different spots.

Dr. Mills, of Philadelphia, agreed with Dr. Dana that the explanation of these cases consisted in the fact that these individuals were born with a certain potentiality, and that at a certain age they were bound to be prematurely senile. He would put on the same basis the familiar forms of spastic paralysis, etc.

Dr. H. A. Tomlinson, of St. Peter, read a paper on

INSANITY AND PHTHISIS, THEIR CONCURRENCY, CO-EXISTENCE AND TRANSMUTATION.

Dr. Edward Wyllys Taylor, of Boston, gave a

LANTERN EXHIBITION OF THE MEDULLA OBLONGATA OF A CHIMPANZEE, WITH OTHER SPECIMENS.

Dr. Taylor showed sections on the screen from the medulla oblongata of a chimpanzee, and a number of pathological preparations from the human cord and brain of somewhat unusual interest.

Comparing the chimpanzee with the human bulb, especial attention was drawn to the following points of difference:

(1) The great development of the motor tracts in the case of the chimpanzee.

(2) The relatively small development of the gray matter and its peculiar conformation.

(3) The high level at which the nucleus cuneatus first reaches its complete form, and the simplicity of the olivary nuclei.

(4) The peculiar irregular character of the sensory crossing, and the smallness of the fillet.

(5) The fewness of the external anterior arcuate fibres, and the absence of the arcuate nucleus.

(6) The course of the hypoglossal nerve.

(7) The large size of the ascending root of the fifth nerve at upper levels of the bulb.

Other sections shown were tumor of the cord, gliomatosis with cavity formation, syphilis, tabes dorsalis, multiple sclerosis, thrombotic softening of the pons, and degeneration of the restiform bodies and middle cerebellar peduncles from sclerosis of the cerebellum.

The first case was one of tumor of the cord itself, a much rarer condition, excluding gliomatosis, than meningeal new growths.

The second case showed cavity formation in the lumbar region, unassociated with the central canal, with accompanying degeneration of the pyramidal tracts. A destructive lesion of the sacral and lower lumbar cord was attributed probably to syphilis, in its later stages of retrograde metamorphosis. The limitation of the disease and its unusual histological characters were especially noted.

The sections of tabes dorsalis were an attempt to demonstrate the incorrectness of Obersteiner's recently published view, that the tabetic degeneration is primarily due to a syphilitic meningitis.

A series of preparations from cases of multiple sclerosis showed that the lesions appeared indiscriminately in the central nervous system, and stood in no definite relation to gray or white matter.

A section through the pons, with softening due to thrombosis of the basilar artery, illustrated the production of the symptom-complex of apoplectiform bulbar paralysis.

Finally, of rather special interest was a complete degeneration of the middle peduncles of the cerebellum and that portion of the restiform body made up of fibres of the cerebellar olive tracts, occasioned by an extensive sclerosis of the cerebellum at and about the corpus dentatum.

THIRD DAY.— MORNING SESSION.

Dr. **William N. Bullard**, of Boston, read a paper on

THE DIAGNOSIS OF HEMORRHAGIC CEREBRAL PACHYMENINGITIS.

Dr. **Edward Wyllys Taylor**, of Boston, showed an interesting case in which he had made the diagnosis of

TABES DORSALIS COMBINED WITH MULTIPLE SCLEROSIS.

The history of the case, in brief, was as follows: Negative family history. Probable syphilis twenty years ago. The patient, aged forty-six, first noticed tremor of the hands fourteen years ago, which increased. This was followed by pains of a lancinating character in the legs, with weakness, girdle sensation, difficulty in micturition, with increasing tremor and weakness. Mind at all times clear. Examination at present time showed a well-marked tabes of typical character, the main symptoms being loss of knee reflex, Argyll-Robertson pupil, lancinating pains, girdle sensation, slight Romberg. In addition to these symptoms were others of no less characteristic sort, namely, well-marked intention tremor, hesitating (though not typical) scanning speech, nystagmus varying at different times, muscular weakness, and spasm of muscles on forced flexion at the knee-joint. The existence of these two sets of characteristic symptoms was held to justify the diagnosis of an actual combination of tabes and multiple sclerosis, a condition which must be regarded as one of extreme rarity, though not undescribed in literature.

Dr. **Joseph Collins**, of New York, presented

A CONTRIBUTION TO THE PATHOLOGY AND MORBID ANATOMY OF AMYOTROPHIC LATERAL SCLEROSIS.

Dr. **Wm. C. Krauss**, of Buffalo, made a

REPORT OF A CASE OF PERONEAL MUSCULAR ATROPHY, WITH AUTOPSY.

The patient was a man seventy-eight years old, of excellent family and personal history. In the summer of 1834, while driving logs, he was struck in the back by a log, which laid him off during the summer. In the fall could not wear shoes because of the cramped condition of the toes and feet. Weakness of the legs appeared slowly, gradually increasing until he was obliged to walk with crutches. Occasionally had rheumatism, particularly in the knees and elbows. Complained much of the feet being cold. Patient came under observation in 1890. Laborious locomotion and striking malformation of the legs. Both feet clubbed. Atrophy of the muscles of the left leg very pronounced. On the right side the peroneal and hamstring muscles wasted. Symmetrical atrophy of the leg muscles. Fibrilliary contractions never noticed. Disorders of sensation never obtainable. Hands and arms not wasted. Patient died in August, 1894. On microscopical examination marked changes were revealed in the lumbar and sacral regions of the cord. The disparity between the right and left ventral horns was striking, the left being smaller than the right, and the right smaller than normal. Atrophy and disappearance of the cells especially prominent. No increase in the neuroglia. Walls of the blood-vessels not affected.

Dr. Sachs had examined the specimens microscopically and concurred in the diagnosis. During life no electrical tests were made owing to the prejudice of the patient.

Dr. **J. W. Putnam**, of Buffalo, described

A CASE OF WRITER'S CRAMP, WITH ASSOCIATED CRAMP OF THE OTHER MUSCLES ON THE SAME SIDE.

Dr. **George L. Walton**, of Boston, read a paper on

THE ETIOLOGY OF OBSTETRICAL PARALYSIS.

A hiatus existed in previous theories of the mechanism of this paralysis. Dr. Carter assumed a stretching of the brachial plexus at a spot above the origin of the suprascapular nerve. This did not account for the escape of the branch (immediately below) to the pectoralis major. The same difficulty presented itself in Oppenheim's theory of pressure against the clavicle. Dr. Walton suggested that the suprascapular was probably bruised independently against the suprascapular notch or the spine of the scapula, while the plexus below was bruised against the clavicle. The branch to the pectoralis major escaped through having no bony point of fixation. Probably *rotation* of the face away from the shoulder, which was caught at the brim of the pelvis, aided the stretching, as well as the drawing away of the head already described in this connection.

The other papers were read by title.

The Antiquity of Man.— We clip the following from the correspondence of the *Medical Press and Circular*:

Sir: — Would you kindly answer me a question through your columns. The question is this, Does there appear, as far as you can judge, *unanimity of opinion* amongst scientists as to the antiquity of man, that is to say, within very rough limits? Does any scientist attempt to limit man's antiquity at a less remote period than, say, fifty thousand years?

I am, sir, yours, etc., O'Hara.

[Will any correspondent kindly oblige? Our "files" do not go back far enough.— Ed.]

THE BOSTON

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LESIONS PRODUCED BY THE ACTION OF CERTAIN POISONS ON THE NERVE-CELL.

IN the August 31st number of the *Philadelphia Medical News*, Dr. Henry J. Berkley, of Baltimore, publishes a preliminary paper on "Experimental Lesions produced by the action of Dog's Serum on the Cortical Nerve-Cell of the Rabbit's Brain." A brief notice of analogous work appeared not long since in the *Johns Hopkins Hospital Bulletin*, and we are exceedingly glad to welcome this completer statement, with details of the results obtained.

The great interest which the study of the bacterial poisons is exciting is now a matter of common knowledge. Their effects upon the nervous system have been made the subject of a vast amount of more or less profitable speculation, but any investigations which could lay claim to scientific demonstration have only within the last few years been forthcoming. The difficulties in the way of anatomical and pathological research in the domain of the nervous system are unquestionably much greater than those of any other tissue in the body. The active neuro-anatomical and pathological work of the past few years has demonstrated, first of all, the difficulties and also the possibilities of investigation in this field. Methods of staining have multiplied and been elaborated to an extent quite in excess of that in any other branch of histological work, and yet the possibility of detecting minute structural cell changes is still beyond our reach. In the method so carefully developed by Nissl we have been able to see far into the structure of the cell, and in the various silver and sublimate methods known by the general name of Golgi, we have had an absolutely new light thrown on the component elements of the nervous system. Nevertheless the methods must still be regarded as inadequate to that complete understanding which we desire, but which, in the nature of things is likely to remain forever beyond our grasp. In the meanwhile we must make the most of what we have.

Nissl's method has been used with marked success, especially by its author, to determine pathological changes in nerve-cells, and certainly must be regarded as a means of extreme value in such research. The method devised by Golgi, on the other hand, and so elaborately worked out by Ramon y Cajal and many others, has done its chief and perfectly incalculable service in reforming our notions of the ultimate ganglion-cell-nerve unity and its relation to its fellows. The term "neuron," a product of the Golgi teaching, has won for itself already a permanent place in our nomenclature. For various reasons, however, which we need not here enter into, Golgi's method and its modifications have not been of distinct value in the determination of pathological changes, although it has been generally felt that such a use would be finally demonstrated.

Berkley's article, to which we now turn, is an attempt of value and significance in this direction, although not absolutely the first. His aim was to determine experimentally the effect upon the cortical ganglion cells and neurons of the injection of dog's blood-serum whose toxic effects upon other animals is a well-recognized physiological fact. Berkley regards the serum as analogous in its action, though by no means identical with that of bacterial toxines.

The research, of which the one before us is a continuation, was begun by Dr. Simon Flexner in 1893, at the Pathological Laboratory of Johns Hopkins Hospital. Flexner found that injections of serum of 1.5 per cent. of the bodily weight of the animal experimented upon were usually fatal in from ten to twelve hours. A less amount produced profound disturbances of a toxic character. The organs studied microscopically showed marked changes in the blood and also in the parenchyma.

From a later series of similar experiments the brains of three rabbits were carefully examined by Berkley — the subject of the present paper — with the hope of determining the changes occurring in the cerebral cortical cells, and whether they were, if found, in a manner equivalent to those observed in the other viscera.

Alluding to the greater difficulties in the way of the investigation of the brain, Berkley justly remarks: "Unfortunately for our closer knowledge of the cerebral cells, these elements do not show mitotic figures, nuclear fragmentation and coagulation-necrosis in the same manner as the liver cells; but with our best stains, whether chemic combinations with the cellular substance or simple dyes, they are eminently stubborn to microscopic analysis. . . . These difficulties in obtaining accurate results from minor changes in the nerve-cells probably arise from the circumstance that the nerve-cells are completed elements, incapable of regeneration and only show alterations of a pronouncedly degenerative type."

So far as the lesions of the cortical cells were determined in the three brains examined, they were constant and identical in all the animals, though varying in intensity, seemingly according to the severity of the poisoning. Two of the rabbits became greatly emaciated before death, but Berkley believes from analogous changes in the brain cells of alcoholics who show no emaciation, that the alterations of the cells were due to the direct action of the poison, rather than to the general denutrition of the tissues.

The methods pursued in the preparation of the brains were, fixing the tissues in alcohol and in Müller's fluid, and after treatment with various anilines, staining with hematoxylin and silver, according to the silver phosphomolybdate formula.[1]

To understand the changes induced by the administration of serum, it will be necessary to allude briefly to the anatomical structure of the neuron. The nerve unit or neuron is made up of a cell body and all its processes. The processes consist, first, of the neuraxon, commonly termed the axis-cylinder process, and, secondly, of the dendrons, more often called the dendritic or protoplasmatic processes. Upon the dendrons of the nerve-cells of the cortex there are a minimal number of thickenings or varicosities. The majority of these occur at the forkings of the dendritic branches. In the course of the neuraxon there are also knots of somewhat greater frequency. Occasional varicosities of the dendron as of the axon are therefore to be regarded as normal. Some work has already been done upon the subject of these varicosities. They have been found in increased numbers in abnormal conditions — paralytic dementia — and also to a certain extent, as already stated, in normal brains.

Berkley finds, after serum poisoning, that the number of varicosities upon the dendrons is greatly increased, and concludes, that, when this takes place and the whole dendron is taken up by such swellings, the change must be regarded as distinctly pathological. He finds further that the entire cell, with the exception of the axon, which remains intact, frequently shows signs of the presence of a destructive process. The gemmules or lateral buds upon the branches of the dendrites, are found to disappear when the tumefactive process is at all advanced.

The specimens stained by Nissl's methylene-blue and magenta and by hematoxylin-eosin showed in one case the presence of a considerable number of polynuclear leucocytes in the perivascular spaces. The vessels, both large and small, were entirely normal. Nissl's stain also showed changes only of minor significance. Specimens hardened in Müller's fluid and stained by the silver phosphomolybdate method brought out changes, to which Berkley attaches great importance. The alterations were, in general, closely allied to those found in alcoholic brains (*vide* paper in *Brain*). Cells of all layers were involved in the pathological process. The degree of degeneration divided the cells into three fairly well-marked groups: (1) Cells, in which the process was beginning, (2) those in which it was moderately advanced, and (3) those in which the dendrons were very much degenerated.

In the first class it was found that the finer branches of the dendrons were slightly tumefied and had few or no gemmules attached to the swellings. In other respects the neuron appeared normal.

In the second, the most numerous type, the tumefactions were much more numerous and involved the entire length of the processes, whereas the finest branches were often entirely degenerated. There was, further, an absolute loss of gemmules on the dendritic processes. Finally, in extreme cases, the twigs were reduced to a mere knotted thread, and their continuity broken, leaving ultimately merely the body of the cell, with the stumpy, tumefied remains of the thicker dendrons attached to it. Berkley draws special attention to the loss of the finest branches of the dendrites within the limits of the molecular layer, since in this part of the cortex many of the associations are made between the dendritic branches and the terminations of nerve fibres of all descriptions. In consequence of this fact, it is evident that disease here must lead to marked disturbance of the mental and motor functions of the cortex, to the extent of partial or complete loss of all the mental faculties of the animal.

In the third group, or that in which cells were most extensively involved in the degeneration, the dendrons were shortened to mere stumps, the finer branches had entirely disappeared, and the coarser ones were irregular in outline, with large and small swellings upon them. The gemmules had entirely disappeared. The cell bodies themselves presented in certain cases the appearance of health, in others the body was clearly involved in the destructive process. The edges of the cell were roughened and irregularly eroded; deep excavations proceeded from the periphery toward the central regions of the body, and in exceptional instances nothing but a mass of detritus was seen occupying the site of the cell body, with the barest traces of the prolongations remaining. Remarkable in all cases was the fact that the neuraxons were scarcely, if at all affected.

The changes observed in the cerebellum were much slighter in degree than in the cerebrum, though of the same general character, and need not detain us.

There were no alterations in the neuroglia either in cerebum or cerebellum, from which it was justly inferred that the degeneration of the nerve cells was probably a simple, primary, non-inflammatory process.

Berkley concludes his paper as follows: "While the small number of the pathologic serum brains does not allow us to speak with entire positiveness of the lesions of the cortical cells, yet from their constancy in all our preparations it is more than probable that we have found a new class of degenerative changes of the nerve-cell that will ultimately prove of the greatest importance in a long series of irritative abnormal conditions in the human subject, and will also open up a new field for the student of mental changes. The absence of vascular lesions of importance precludes the possibility that alterations of nutrition from disease of the vessels are of the first importance in the production of the degeneration of the dendron. Much rather would we refer them to the direct action of the toxalbumin upon the cellular protoplasm, causing, in some unknown manner, at first swelling of the substance of the dendron, and later atrophy and destruction."

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[1] The details of methods will be found in the autumn number of *Brain*, in connection with a paper by Berkley on "Experimental Lesions produced by the Action of Absolute Ethyl-Alcohol on the Nerve-Cells of the Rabbit's Brain."

It is altogether probable that the optimistic views expressed in the paragraph just quoted and in others of Berkley's published work will not meet with universal acceptance. Valuable and conclusive as the investigation may be for the special class of cases to which he has devoted his attention, we are hardly ready to go as far as to say that such results as he has obtained will necessarily "open up a new field for the student of mental changes," or as he still more strongly puts it in another article:[2] "It would seem that by the use of this new method of staining — the phosphomolybdate of silver in free nitrate of silver — which offers a constancy and fineness of detail before unattainable in pathological preparations, that we have almost passed the border-land of the uncertainty of mental disease, and will be able to relegate, in the fulness of time, all decided mental changes to the same definite category, in which we are now able to place the formerly obscure diseases of the nervous system, whose lesions are now more or less thoroughly understood, and place psychiatry upon the same footing as many of its sister branches of medicine, that rest upon a secure pathological basis."

To this we cannot assent. A method of staining, however refined it may be, can never reveal the changes which underlie symptoms having their sole expression in the field of mind. It is certainly no extreme conservatism to say that the pathological anatomy of abnormal mental states must remain, as it has in the past, a sealed book, and that an adequate pathology of mind, in the sense that we use the term in speaking of the nervous system, is quite beyond the range of possible accomplishment.

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MEDICAL NOTES.

THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE OF THE UNITED STATES ARMY now contains 116,847 volumes and 191,598 pamphlets.

EVERY FATAL CASE OF TYPHOID, says Mr. Ernest Hart, is, in fact, a violent death, an example of water poisoning, and should be the subject of sanitary inquest.

SMALL-POX IN LONDON. — The English journals state that the outbreak of small-pox in London goes on increasing, despite the energetic measures taken by the health authorities.

DR. HUGHLINGS JACKSON HONORED. — Dr. Hughlings Jackson was presented with a portrait, subscribed for by many friends and admirers of his eminent services to neurology, on October 1st, at the London Hospital Medical College.

THE PROHIBITION OF WET NURSES. — It is reported that a proposal is to be discussed at the annual congress of the German Social Democratic Party, which is to be held at Breslau next month, that a law be enacted prohibiting wet nurses. The reasons alleged for this extraordinary proposition are said to be the advantages attending the use of sterilized milk.

A SUCCESSFUL OPERATION FOR INTUSSUSCEPTION IN A CHILD FOUR MONTHS OLD. — Dr. J. Bion Bogart presented to the Brooklyn Surgical Society a child four months old which had been successfully operated upon for intussusception three weeks before. The symptoms of the trouble had been present for three days, when the child was chloroformed and an air inflation tried, with partial success, all but about eight inches of the imprisoned intestine being dislodged. As this portion was not affected the abdomen was promptly opened and the remaining portion reduced. The success of the operation in so young a child makes the result certainly a brilliant one.

A LINGUIST IN THE NAVY. — We are glad to know that some of our naval officers do good work in addition to their routine service. Surgeon F. B. Stephenson, U. S. N., has lately finished translations from several Russian publications about the gypsy moth, for the State Board of Agriculture of Massachusetts. During a recent cruise on the Asiatic Station, Dr. Stephenson made use of his opportunities to advantage in gaining a practical knowledge of the language of this nation — so rapidly growing in strength and influence. — *Army and Navy Journal.*

NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, October 9, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 91, scarlet fever 17, measles 6, typhoid fever 46.

CONTAGIOUS DISEASES IN CAMBRIDGE. — Contagious diseases are reported to be unusually prevalent in Cambridge, Mass., fourteen cases having been recently reported to the Board of Health in one day.

NEW YORK.

THE PREVENTION OF CONTAGIOUS DISEASES IN SCHOOLS. — With a view to the further prevention of contagious diseases among the children of the public schools, the Board of Health has ordered the discontinuance of the use of slates, sponges and common drinking cups. It has also established a rule requiring that all school books shall be re-covered with fresh paper at least once a month.

A FORTUNATE COMBINATION. — For some time past an orchestra has been maintained among the male nurses of the New York Hospital, and this orchestra assists at the various entertainments given during the winter season for the patients and employés of the institution. Men who are musicians of fair ability as well as efficient nurses are therefore in demand, and they are paid something for their musical services in addition to their regular salaries as nurses.

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[2] Johns Hopkins Hospital Bulletin, April, 1895.

The Case of Dr. Burnette. — It was Dr. George Lenox Curtis, and not Dr. B. Farquhar Curtis, as stated, who assisted Dr. Rowland Jones at the autopsy in the case of Dr. Edward W. Burnette. He was also associated with Dr. Jones in the treatment, and is preparing with him the report of the case for publication. Dr. Curtis, who is a specialist in cancerous diseases and has studied abroad under Koch and Virchow, states that they propose to prove that Dr. Burnette was really inoculated with the virus of cancer, and that there is no cancer traceable in the family of the latter. It should have been stated that Dr. Burnette was a graduate of the College of Physicians and Surgeons, and not of Bellevue Hospital Medical College. He received his degree of M.D. in the year 1869.

A Case of Raynaud's Disease. — A death from a rare cause, Raynaud's disease (*la gangrène symétrique des extrémités*), occurred in Brooklyn on October 1st. The patient was a male, thirty-five years of age, and was first affected with the trouble about a year ago. After consulting various authorities in this country he went to Germany, where his case was presented at a number of clinics, and only returned a few weeks before his death, which resulted from exhaustion. The gangrene was located in the upper extremities.

The Question of Child Insurance. — The sixth annual convention of the State Societies for the Prevention of Cruelty was held at Albany on October 1st and 2d. Elbridge T. Gerry, Esq., of the Society for the Prevention of Cruelty to Children, was reelected President. Resolutions were adopted looking to the doing away with the practise of insuring the lives of children under the age of ten years and proposing legislative amendments to render effective the law relative to the "age of consent," and action was taken in regard to various other reforms.

Improvement in the Public Health. — The fine autumn weather of the past week has had an excellent effect upon the public health. The number of deaths reported during the week ending October 5th was 704; which is nearly 50 less than the average mortality of the city for the corresponding weeks of the past five years. Of the total number of deaths no less than 103, or more than one-seventh, were due to phthisis; while 58 deaths resulted from pneumonia, and 44 from the various forms of Bright's disease. Diphtheria still continues to be by far the most prevalent of the zymotic diseases, and the number of deaths from it during the work was 27. Of the 704 deaths, 302 occurred in children under five years of age.

Miscellany.

THE CRAIG COLONY FOR EPILEPTICS.

This Colony, named for the late Oscar Craig, of Rochester, formerly President of the New York State Board of Charities, occupies 1,900 acres of land in the Genesee Valley, on the line of the Erie and the Delaware and Lackawana railways. The farms, gardens and orchards of which it consists are in a high state of cultivation, and yield an income of from $12,000 to $15,000 a year.

The colony is arranged on the village plan, and the village, for such it is, was planned under the direction of Frederick Law Olmsted. The patients will be set to work in the farms, gardens and orchards, and (under careful supervision, of course) will do the work of the community. Various trades will be represented among the patients, and the tailors', shoemakers', carpenters' and painters' work of the town will be carried on as far as possible by the patients themselves.

In such a community those patients who are strong and able to work will not be ostracised, deprived of educational advantages and opportunities to attend social and religious gatherings by the fact that they have occasional convulsions. In a community where all are more or less subject to this infirmity, it will not stigmatize its possessor and debar him from free communication and competition with his neighbors.

For those unable to work and who need constant treatment and attention, hospital facilities will be provided, and their treatment will be carried out according to the best known methods.

Inasmuch as the resources of the land are nearly adequate when under cultivation to supply the patients with food, and it is estimated that by the sale of surplus agricultural and manufactured products the colony can be made practically self-supporting, it is probable that the epileptics now supported by the State of New York will be no longer a burden to the tax-payers.

The work of preparing the existing buildings for the reception of patients has been in progress during the summer, and by November the first quota of patients, sixty in number, will be received from the New York State almshouse. There are at present 600 epileptics in the State almshouses, and additional buildings will have to be erected before more than 300 of them can be received.

As soon as the State patients have been accommodated, provision will be made for the reception of private patients; and such patients will be allowed, if they desire and are able, to build cottages for their own use in the grounds of the colony.

There will be no restriction as to the age of patients admitted, and the only restriction practically applies to the mental condition. Insane epileptics, or epileptics subject to insane outbreaks, cannot be taken into the colony.

The object of the colony is to provide for the four great needs of these unfortunates:

(1) To give them schools where they may be educated as other children and young people are.

(2) To afford them industrial training in any sort of occupation they may desire to follow.

(3) To provide those epileptics a home to whom all other doors are closed.

(4) To treat every case of epilepsy according to the best known scientific methods.

This undertaking is not without precedent. It is the second institution of its kind in this country. An example of what can be accomplished by such a colony is furnished by success of the colony which was started with four epileptic patients at Bielefeld in Westphalia, Rhenish Russia, in 1867. The beginnings were made with doubt and hesitation, but it was soon found that the patients, instead of looking with horror upon the attacks of their fellows, and thus being made worse themselves, developed an *esprit du corps*, as possessed of a common infirmity and were ever ready to go to the aid and protection of a fellow-patient suffering from an attack.

As a result of gradual growth and organization, there now stands at Bielefeld a large colony, with hospitals, schools, shops, farm-houses, shoe-factories, book-binderies, and buildings for numerous other occupations in which epileptics are employed. Between the founding of the institution in 1867, and the end of the year 1888, 2,534 epileptic patients were treated in this institution. During the year 1888, 1,091 patients were cared for by 67 brothers and 68 sisters of religious orders, showing that one attendant was necessary for approximately seven epileptics.

In the care of so large a number of cases exceptional opportunities have been afforded for the study of the treatment of the disease, and the results attained have greatly contributed to our present knowledge on this subject.

In our own country the need of such colonies for epileptics has long been recognized, and a beginning has been made in Ohio and New York. A similar purpose will be served for Massachusetts by the new epileptic hospital to be established at Monson, and it is to be hoped that the charity and philanthropy of other States will provide these unfortunates with similar advantages.

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ELECTROTHERAPY AS A MEANS OF DIAGNOSIS IN GYNECOLOGY.

Dr. Apostoli, of Paris, after a long and thorough trial of his method, has come to the following general conclusions, which were presented by him to the British Medical Association at its last meeting:

(1) The faradic current of tension (generated by the coil of long and fine wire) applied to the uterine cavity, according to the rules established by Dr. Apostoli in 1883, relieves, for a longer or shorter time, all ovarian pain of nervous or hysterical origin, but remains powerless or nearly so in cases of ovarian pain caused by inflammatory lesion of the peri-uterine tissue or of the appendages.

(2) The same faradic current is therefore useful in diagnosis, inasmuch as it helps us to distinguish the nature of so-called ovarian pain, and to determine rapidly the differential diagnosis between hysterical and inflammatory ovarian pain. Where the two kinds of pain exist in the same patient we are helped to understand their nature by the fact that the one is relieved and the other is not.

(3) If, then, the curative effect of the faradic current clears up or rectifies a doubtful diagnosis, it protects us at the same time, from undertaking a useless operation. On the other hand, if the same faradic current proves ineffective, the lesion being inflammatory, we are led to resort to a supplementary galvanic treatment or to a surgical operation sooner or later.

(4) The constant galvanic current, applied to the uterine cavity in doses gradually increasing from 50 to 120 milliampères, according to the rules published by Dr. Apostoli in 1884, and bearing in mind the individual susceptibility and tolerance, will be almost always supported without much pain during the seance, and without febrile reaction afterward, if the parts adjacent to the uterus are free from inflammation. Simple cystic, peri-uterine tumors, which are neither inflamed nor suppurating (such as ovarian cysts and hydro-salpinx), may also show perfect tolerance of the galvanic current. The galvanic current is also sometimes perfectly supported by cases in which the uterus is surrounded by old inflammatory products or exudations no longer pathogenic.

(5) There are three classes of cases which should be considered as exceptions to the preceding rule, for they bear the galvanic current more or less badly, though they do not necessarily produce much febrile reaction after the seance. They are: (*a*) certain forms of hysteria, (*b*) fibro-cystic tumors of the uterus, (*c*) enteritis with false membrane.

It is generally easy to diagnose these cases of intolerance.

(6) All acute peri-uterine inflammation (of the pelvic cellular tissues of the peritoneum and especially of the appendages) will cause the galvanic current to be badly borne when it passes 40 or 50 milliampères, and will cause intolerable pain and febrile reaction when carried beyond this intensity.

(7) The intolerance for the galvanic current is generally proportionate to the extent and gravity of the lesions referred to and increases with the intensity of the current employed — especially when it passes 40 or 50 milliampères.

(8) All inflammation of the appendages which is *curable* (*symptomatically at least*) without radical operation, will bear the galvanic current better and better, and there will be a corresponding improvement of the prominent symptoms, such as pain and hemorrhages.

The intolerance noted at the beginning progressively disappears.

(9) All grave inflammatory lesions of the appendages, and notably all suppurative processes which are *incurable* (*even symptomatically*) by conservative means, show the same intolerance from the beginning to the end of the treatment which was noticed at first, and which is apt to increase instead of diminish if the treatment is continued.

(10) Thus, the simple study of the tolerance or intolerance of the intra-uterine galvanic treatment, and especially of the post-operative pain and fever occurring on the evening of, or the day following the treatment, enables us to make the diagnosis. It also, in four or five seances, given twice weekly, informs us of the condition of the appendages, of their possible inflammation and its degree, and in this way it lessens the number of laparotomies and exploratory incisions.

(11) The same study of the so-called galvanic reactions also informs us rapidly (in five to ten seances) of the curability of these inflammatory lesions which the electric current has demonstrated, and in consequence of this it tells us in one case to abstain from operation while in another it shows an operation to be urgent.

(12) *En résumé*, gynecological electro-therapeutics,

carefully, methodically and patiently applied, instead of being opposed to the marvellous progress of surgery, comes to its aid.

Independently, in fact, of the great therapeutic service which it renders every day, electricity serves as a *touch-stone;* it assists us in diagnosis and thus directly serves the interests of surgery, in one case showing an operation to be useless and dangerous, in another that its necessity is urgent.

Thus many laparotomies, so-called exploratory incisions and mutilations practised without due deliberation for the relief of rebellious ovarian pain or for lesions of the appendages of uncertain nature, should be, from this time forth, delayed or formally proscribed until all the resources of *faradic sedation* on the one hand and of the *intra uterine galvanic effect* on the other, have been tried. Experience has abundantly proved these currents to be innocuous, if given with necessary aseptic precautions.

◆

A PERSEVERING THERAPEUTIST.

M. H. Barye, the medical officer in charge of the State dispensary at Phaltan, India, reports in the *Medical Reporter* of September 1st, the case of a female child of eighteen months treated by him for some time for gastro-intestinal symptoms attended by fever, before his attention was called by the child's father to a marked enlargement of the liver, to which his treatment was directed. In spite of his care, and that of a native specialist, by whom the child was treated for eight days, and a journey to Poona for a consultation (the doctor seems rather surprised that this produced no diminution in the size of the liver) the child continued to grow worse. Homeopathy and electro-homeopathy were tried for some twenty days without effect, and a second journey to Poona finally ended the child's sufferings.

General edema, ascites and jaundice preceded the child's death, which the doctor attributed to scirrhosis of the liver. In order, probably to prove that death was not due to lack of therapeutic resource on his part, the doctor publishes the following list of drugs which were tried in different combinations during the course of treatment. Nothing is stated with regard to the details of their administration; but he naively informs us that the medicines which are marked with an asterisk produced some temporary effect, and only in one instance, that of citrate of caffeine, does he state what symptoms were favorably affected. If a child can die after such thorough drugging as this, and after consultations, electro-homeopathy and homeopathy itself, there would seem to be nothing left for these cases but Christian Science.

1. Ammon. chloridum
2. Taraxaci
3. Potass iodidum
4. Potass bromidum
5. Podophyllum
6. Sodii sulphas
7. Mag. sulphas
8. Iodine
9. Arsenic
10. Mercury
*11. Donavon's sol.
12. Ipecacuanha
13. Acid nitro Hydroch. dil.
14. Cascara corutal
15. Calumba
16. Quinine sulphas
17. Sodii salicylas
18. Digitalis
19. Potass bicarb
20. Ingluvin
21. Pepsin
*24. Berberis aqua folia — with eunomyn
25. Caffein citricum acted well for a time as a diuretic and stimulant — reduced dropsy and drowsiness.

The preparations of iodine, mercury and camphor were tried externally.

METEOROLOGICAL RECORD,

For the week ending September 28th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..22	30.05	82	94	71	62	63	62	W.	W.	10	7	C.	C.	
M..23	29.96	84	96	72	60	65	62	W.	S.W.	7	13	C.	C.	
T 24	30.14	67	73	61	52	55	54	N.	N.W.	18	6	F.	C.	
W..25	30.20	58	65	52	62	92	77	N.	S.W.	3	8	C.	O.	
T..26	29.88	72	85	60	95	85	90	S.W.	S.W.	13	14	O.	R.	.05
F..27	29.96	68	73	62	63	76	70	W.	N.W.	12	10	O.	F.	.14
S...28	30.24	55	60	50	64	80	72	N.	S.E.	7	12	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 28, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,704,506	864	413	23.52	10.56	15.36	1.80	2.40
Chicago . . .	1,227,382	—	—	—	—	—	—	—
Philadelphia .	1,163,864	—	—	—	—	—	—	—
Brooklyn . .	1,100,000	492	241	24.80	8.80	14.60	1.80	4.40
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	494,205	275	148	45.36	10.80	28.08	3.24	7.02
Baltimore . .	496,315	195	94	23.46	8.67	17.85	3.57	.51
Cincinnati . .	333,970	115	48	18.27	12.18	9.57	3.48	4.35
Cleveland . .	325,000	104	47	5.76	4.80	—	2.88	2.88
Washington .	285,000	95	36	23.00	13.00	—	12.00	—
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	27	12	33.33	22.22	22.22	3.70	—
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	32	12	28.17	9.39	6.26	9.39	12.52
Fall River . .	88,020	48	27	43.68	4.16	36.36	4.16	—
Lowell . . .	84,359	43	23	32.62	4.66	30.29	2.33	—
Cambridge . .	81,519	29	13	48.30	3.45	51.05	6.90	6.90
Lynn	62,355	20	—	35.00	—	15.00	—	10.00
New Bedford .	55,254	22	10	45.55	—	27.30	—	13.65
Springfield . .	51,534	20	6	15.00	15.00	5.00	5.00	—
Lawrence . .	52,153	35	17	22.80	5.70	11.40	—	—
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	14	7	42.84	21.42	—	7.14	7.14
Brockton . .	33,157	8	1	12.50	—	—	12.50	—
Haverhill . .	30,185	6	1	16.66	—	—	16.66	—
Malden . . .	29,706	8	3	—	—	—	—	—
Chelsea . . .	31,295	12	4	8.33	16.66	—	—	—
Fitchburg . .	26,394	8	5	12.00	—	12.00	—	—
Newton . . .	27,[illegible]22	12	5	25.00	—	12.50	—	8.33
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	8	2	—	—	—	—	—
Waltham . .	20,877	7	0	28.56	14.28	28.56	—	—
Quincy . . .	20,712	—	—	—	—	—	—	—
Pittsfield . .	20,447	4	3	50.00	—	50.00	—	—
Everett . . .	18,578	—	—	—	—	—	—	—
Northampton .	16,738	2	0	—	—	—	—	—
Newburyport .	14,554	—	—	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,583; under five years of age 1,215; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 724, consumption 237, acute lung diseases 199, diarrheal diseases 510, diphtheria and croup 85, typhoid fever 65, whooping-cough 29, scarlet fever 13, cerebro-spinal meningitis 12, malarial fever 8, measles 7, erysipelas 5.

From whooping-cough New York 12, Brooklyn 11, Baltimore, Boston and Providence 2 each. From scarlet fever New York, Brooklyn, Boston and Fall River 2 each, Cambridge, Lynn, New Bedford, Springfield and Chelsea 1 each. From cerebro spinal meningitis New York and Lawrence 4 each. Lynn, Somerville, Brookline and Hyde Park 1 each. From measles New York and Brooklyn 3 each, Cincinnati 1. From malarial fever Brooklyn 4, New York 3, Charleston 1. From erysipelas New York 2, Brooklyn, Baltimore and Boston 1 each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 28, 1895, TO OCTOBER 4, 1895.

Captain Guy L. Edie, assistant surgeon, is relieved from duty as assistant to the attending surgeon in the city of Washington.

First-Lieut. Frederick P. Reynolds, assistant surgeon, is relieved from duty at Fort Sam Houston, Texas, and ordered to Fort Clark, Texas, for duty relieving Captain Benjamin L. Ten Eyck, assistant surgeon.

Captain Ten Eyck, on being thus relieved, is ordered to Columbus Barracks, Ohio, for duty.

First-Lieut. William W. Quinton, assistant surgeon, will be relieved from temporary duty at Fort Logan, Colorado, to take effect upon the arrival there of Captain W. W. Johnson, assistant surgeon, and ordered to Fort Riley, Kansas, for duty.

Lieut.-Col. Joseph R. Gibson, deputy surgeon-general, will report in person to the president of the Army Retiring Board at Washington Barracks, D. C., at such time as he may designate for examination by the board.

Lieut.-Col. John S. Billings, deputy surgeon-general, having served over thirty years in the Army, is on his own application and by direction of the President, retired from active service, this date October 1, 1895.

First-Lieut. Frank T. Meriwether, assistant surgeon, having been found incapacitated by an Army Retiring Board, on account of disability incident to the service is, by direction of the President, retired from active service this date.

Captain Henry P. Birmingham, assistant surgeon, is granted leave of absence for one month, to take effect upon the arrival at Fort Trumbull, Conn., of Captain Geo. E. Bushnell, assistant surgeon.

Captain Geo. E. Bushnell, assistant surgeon, will proceed to Fort Trumbull, Conn., and report for temporary duty during the absence on leave of Captain H. P. Birmingham, assistant surgeon.

Major Washington Matthews, surgeon, having been found incapacitated for active service by an Army Retiring Board, on account of disability incident to the service is, by direction of the President, retired from active service this date, September 26, 1895.

Leave of absence for four months, to take effect about November 5, 1895, is granted Captain Thomas U. Raymond, assistant surgeon.

Leave of absence for one month, to take effect when his services can be spared, with permission to apply for an extension of one month, is granted Captain Eugene L. Swift, assistant surgeon, Fort Yates, North Dakota.

PROMOTION.

Captain Louis W. Crampton, assistant surgeon, promoted to be surgeon with the rank of Major, September 6, 1895.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 5, 1895.

E. S. Bogert, medical director, detached from duty in charge of naval hospital at New York, November 1, and ordered in attendance on officers of the Navy in that city.

T. N. Penrose, medical inspector, ordered to duty November 1st, in charge of the naval hospital at New York in addition to his present duty.

R. C. Persons's, surgeon, recent orders are so far modified that when detached from the "Minnesota" he is ordered to special duty in connection with the improvements of the naval hospital at New York.

L. G. Heneberger, surgeon, ordered to duty in attendance on naval officers in New York.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING SEPTEMBER 30, 1895.

Fessenden, C. S. D., surgeon. Granted leave of absence for thirty days. September 24, 1895.

Bailhache, P. H., surgeon. Detailed to represent Service at meeting of American Public Health Association. September 24, 1895.

Gassaway, J. M., surgeon. Granted leave of absence for one day, September 21, 1895, and for fifteen days, September 23, 1895.

Carter, H. R., surgeon. Granted leave of absence for one day. September 24, 1895.

Brooks, S. D., passed assistant surgeon. Directed to proceed from Chicago, Ill., to St. Louis, Mo., for temporary duty. September 16, 1895.

Williams, L. L., passed assistant surgeon. Relieved from temporary duty at South Atlantic Quarantine and directed to rejoin station at Charleston, S. C. September 19, 1895. Granted leave of absence for twelve days. September 25, 1895.

Kinyoun, J. J., passed assistant surgeon. Detailed to represent Service at meeting of American Public Health Association. September 24, 1895.

Stoner, J. B., passed assistant surgeon. Granted leave of absence for thirty days. September 20, 1895.

Rosenau, M. J., passed assistant surgeon. To proceed from Eagle Pass, Texas, to San Francisco Quarantine Station for temporary duty. September 16, 1895.

Cofer, L. E., assistant surgeon. Granted leave of absence for thirty days. September 23, 1895.

Nydegger, J. A., assistant surgeon. To proceed from Savannah, Ga., to Mobile, Ala., for temporary duty. September 16, 1895.

Oakley, J. H., assistant surgeon. Granted leave of absence for thirty days. September 30, 1895.

SOCIETY NOTICES.

Suffolk District Medical Society.— The Section for Clinical Medicine, Pathology and Hygiene will meet at 10 Boylston Place on Wednesday, October 16th, at 8 o'clock p. m.

Papers: Dr. Edward Wyllys Taylor, "Report of Cases of Brain Tumor."

Dr. Frederick Coggeshall, "Clinical Tests of Some New Remedies." John L. Ames, M.D., *Secretary.*

New York State Medical Association. — The twelfth annual meeting will be held Tuesday, Wednesday and Thursday, October 15, 16 and 17, 1895, at the Mott Memorial Hall, 64 Madison Avenue near 27th Street, New York City.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

Dr. Wm. F. Whitney will lecture at the Medical School October 10th and October 17th, at 8 p. m. Subject: "Tumors of Embryonic Origin." The profession are invited.

RECENT DEATH.

Horatio S. Soule, M.D., M.M.S.S., died at Winthrop, October 7th, aged seventy-two. He was graduated from the Bowdoin Medical College in 1854 and had practised in Winthrop for many years. During the Civil War he was assistant surgeon in the Fifty-sixth Massachusetts Volunteers. He was for many years chairman of the Board of Health of Winthrop.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Diphtheria by Antitoxin. By William H. Welch, M.D. Reprint. 1895.

Surgical Clinic held at St. Mary's Hospital, February 10, 1895. By H. O. Walker, M.D., Detroit, Mich.

Words not Usually Found in Medical Dictionaries. By Irving C. Rosse, A.M., M.D., F.R.G.S., Washington, D. C. Reprint. 1895.

Trattato di Patologia e Terapia Chirurgica Generale e Speciale. Opera Illustrata da circa 500 figure originali intercalate nel testo e da tavole litografiche. Volume I. Printata 3a (pag 401 a 576 viii). Lire 5. Roma: Società Editrice Dante Alighieri. 1895.

Modern Materia Medica with Therapeutic Notes, for the use of Students of Medicine. By Dr. Otto Roth. Seventh edition. Revised by Dr. Gregor Schmitt, Director of the Royal National and Provincial Boards of Health in Wurzburg. New York: William Wood & Co. 1895.

A Manual of Organic Materia Medica, being a Guide to Materia Medica of the Vegetable and Animal Kingdoms, for the Use of Students, Druggists, Pharmacists and Physicians. By John M. Maisch, Ph.M., Phar.D., late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Sixth edition. Revised by Henry C. C. Maisch, Ph.G., Ph.D. With 285 illustrations. Philadelphia: Lea Brothers & Co. 1895.

Cutaneous Medicine; a Systematic Treatise on the Diseases of the Skin. By Louis A. Duhring, M.D., Professor of the Diseases of the Skin in the University of Pennsylvania; Author of "A Practical Treatise on Diseases of the Skin," and "Atlas of Skin Diseases." Part I. Anatomy and Physiology of the Skin; General Symptomatology, Etiology, Pathology, Diagnosis, Treatment and Prognosis. Illustrated. Philadelphia: J. B. Lippincott & Co. 1895.

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Teaching will be conducted in small classes and under the personal direction of the heads of the departments.

The courses will be mostly of eight weeks' duration, and the practitioner will be able during a brief residence to take several of them. Those desiring to study a specialty may pursue long, continuous courses in any single branch at reduced rates. All fees are payable at the Medical School to the Secretary.

A graduate of another recognized Medical School may obtain the degree of M.D. from this University after a year's study in the graduate course and after passing all the required examinations in under-graduate work. These examinations may be passed at such times as are agreed upon by the examiners and the graduate student. A certificate of attendance will be furnished when desired.

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† 4. Histology and Microscopy	Dr. Minot	Medical School	Special*	30.
† 5. Elementary Human Embryology	Dr. Minot	Medical School	Special*	25.
† 6. Advanced Embryology	Dr. Minot	Medical School	Oct.—May	75-125
† 7. Physiology	Dr. Bowditch	Medical School	Special*	Special.*
† 8. Medical Chemistry	Dr. Wood	Medical School	Special*	35.
9. Clinical Microscopy	Dr. Whitney	Massachusetts General Hospital	Special*	Special.*
†10. Surgical Pathology	Dr. Mallory	Medical School	Apr., May	20.
†11. Pathology of the Infectious Diseases.	Dr. Wright	Medical School	Nov., Dec.	25.
†12. Pathological Anatomy and Histology of the Nervous System	Dr. Taylor	Medical School	Special*	15.
13. Clinical Medicine	Dr. Ernst	Massachusetts General Hospital	Oct.	15.
†14. Clinical Medicine	Dr. Knight	Boston City Hospital	Oct., Nov.	10.
†15. Clinical Medicine	Dr. Mason	Boston City Hospital	Nov., Dec., Jan.	20.
‡16. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Oct.	20.
‡17. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Dec.	20.
‡18. Abdominal Surgery	Dr. Conant	St. Elizabeth's Hospital	Oct., Nov.	25.
19. Clinical, Operative, Genito-urinary, Pathological and Minor Surgery	Drs. Monks and Thorndike	Boston City Hospital	Oct.—Dec.	25.
20. Clinical, Operative, and Minor Surgery	Drs. Burrell, Lovett, and Munro	Boston City Hospital	Dec.—Apr.	25.
21. Operative Surgery	Dr. C. B. Porter	Medical School	Special*	25.
22. Clinical Surgery	Dr. M. H. Richardson	Massachusetts General Hospital	Feb., March, Apr., May	25.
‡23. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Oct., Nov., Dec.	25.
‡24. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Apr., May, June	25.
25. Minor Surgery	Dr. Scudder	Massachusetts General Hospital	Feb., ‡Apr., ‡May	25.
26. Clinical Surgery	Dr. Gay	Boston City Hospital	Apr., May	15.
27. Clinical Surgery	Dr. Homans	Massachusetts General Hospital	March, Apr.	20.
†28. Orthopedic Surgery	Dr. Bradford	Children's Hospital	Apr.	15.
29. Clinical Obsterics	Dr. W. L. Richardson	Boston Lying-in Hospital	Nov., Dec., April, May	20.
30. Clinical Obstetrics	Dr. C. M. Green	Boston Lying-in Hospital	Jan., Feb., March	20.
31. Practical Obstetrics	Dr. Reynolds, Townsend, and Haven	Boston Lying-in Hospital	Special*	20.
32. Operative Obstetrics	Dr. C. M. Green	Medical School	Special*	25.
33. Diseases of the Skin	Dr. White	Massachusetts General Hospital	Oct.—June	25.
34. Otology	Dr. Blake	Infirmary	Dec., Jan., Apr., May	25.
35. Otology	Dr. Bryant	Infirmary	Dec., Jan	25.
†36. Ophthalmology	Dr. Standish	Infirmary	Dec., Jan.	Special.*
†37. Ophthalmology	Dr. Cheney	Massachusetts General Hospital	March, Apr.	Special.*
38. Gynecology	Dr. Swift	Free Hospital for Women	Oct.	25.
39. Gynecology	Dr. Swift	Free Hospital for Women	Dec.	25.
40. Gynecology	Dr. Davenport	Free Hospital for Women	Jan.	25.
41. Gynecology	Dr. Davenport	Free Hospital for Women	March	25.
42. Gynecology	Dr. Haven	Boston Dispensary	Nov.	25.
43. Gynecology	Dr. Swift	Boston Dispensary	Jan., Feb.	25.
44. Gynecology	Dr. C. M. Green	Boston City Hospital	Oct., Nov., Dec.	25.
45. Operative Gynecology	Dr. Davenport	Medical School	Special*	25.
46. Diseases of the Nose and Throat	Dr. De Blois	Boston City Hospital	Feb., March	Special.*
‡47. Diseases of the Nose and Throat	Dr. Farlow	Boston Dispensary	Oct.—Jan.	Special.*
‡48. Diseases of the Nose and Throat	Dr. Farlow	Boston City Hospital	Apr., May.	Special.*
‡49. Diseases of the Nose and Throat	Dr. Coolidge	Massachusetts General Hospital	Feb., March	Special.*
†50. Mental Diseases	Dr. Cowles	McLean Hospital	Special*	10.
†51. Bacteriology	Dr. Ernst	Medical School	Special*	25.
†52. Diseases of Children	Dr. Wentworth	Children's Hospital	Oct., Nov.	20.
†53. Diseases of Children	Dr. Wentworth	Children's Hospital	Dec., Jan.	20.
†54. Diseases of Children	Dr. Buckingham	Children's Hospital	Feb., March	20.
†55. Diseases of Children	Dr. Buckingham	Children's Hospital	Apr., May	20.
†56. Neurology	Dr. Knapp	Boston City Hospital	Feb., March	20.
†57. Neurology	Dr. Knapp	Boston City Hospital	Apr., May	20.
58. Neurology	Dr. Walton	Massachusetts General Hospital	Nov.	20.
59. Legal Medicine	Dr. Draper	Boston City Hospital	Oct.—June	25.
60. Hygiene	Dr. Harrington	Medical School	Special*	25.

* To be arranged with instructor. † Women admitted. ‡ Women admitted conditionally.

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ORIGINAL ARTICLES.

PAGE

he Conservative Value of the Play-Impulse. *By Irving C. Rosse, M.D.*, Washington, D. C. 385

arcinoma of the Cardiac End of the Stomach. *By Albert N. Blodgett, M.D.*, Boston 389

hat Number of Cases is Necessary to Eliminate the Effect of Chance in Mortality Statistics, Especially those of Typhoid Fever: A Statistical Study. *By Morton Prince, M.D.*, Physician for Nervous Diseases, Boston City Hospital 392

ardiac Stimulants. *By Herman F. Vickery, M.D.*, Instructor in Clinical Medicine, Harvard University; Physician to Out-patients, Massachusetts General Hospital 395

MEDICAL PROGRESS.

eport on Pathology. *By James H. Wright, M.D.*, Assistant in Pathology, Harvard Medical School 397

The Etiology of the Suppurative Complications of Typhoid Fever.—Ribbert's Theory of the Origin of Carcinoma.—Experimental Nephritis from Sodium Chloride.—Bacteria and the Digestive Functions.—Rhabdomyoma of the Sciatic Nerve.—The Pathological Histology of Rabies.—The Lesions of Experimental Diphtheritic Paralysis.

REPORTS OF SOCIETIES.

The American Association of Genito-Urinary Surgeons. Ninth Annual Meeting, Niagara Falls, May 28 and 29, 1895 399

First Day.—Tuberculosis and Neoplasms of the Bladder: Surgery or Hygiene?—Hematuria.—Gonorrhea in the Female.

RECENT LITERATURE.

The Pocket Materia Medica and Therapeutics. By C. Henri Leonard, A.M., M.D. Detroit, Mich.: The Illustrated Medical Journal Co. 1895 401

The Year-Book of Treatment for 1895. Philadelphia: Lea Brothers & Co. 1895 401

EDITORIALS.

Syphilis as Described and Treated by the Chinese 402

Thyroidismus 403

On the Transmission of Scarlatina by the Intermediation of a Letter 403

Medical Notes 404

Picric Acid for Burns.—The Treatment of Diphtheria with the Antitoxin.—A Death from Murphy's Button.—Contraction of the Lumen of the Intestine after Anastomosis by Murphy's Button.—New Anatomy Law in Wisconsin.

New England.

Acute Infectious Diseases in Boston.—Board of Health of Portland, Me.—Nomination of Dr. Julian A. Mead.—The Lyman Prize.—The Perkins Institution for the Blind.—Bequests to Charitable Institutions.—Decrease in Mortality in Boston.

New York.

A Death from Nitrous Oxide.—"Front" and "Rear" Mortality.—The First Botanic Garden in New York.—Tetanus Cured by Antitoxin.—Death of Dr. Pohle.

CORRESPONDENCE.

Revival of the Index Medicus. *John B. Roberts*, Secretary, Philadelphia 407

MISCELLANY.

Boston Dispensary 406

The First Cry 407

An Audible Intra-Uterine Cry 407

Meteorological Record, October 5, 1895 408

Record of Mortality, October 5, 1895 408

Army Service 408

Society Notice 408

Harvard Medical School. Evening Lectures 408

Books and Pamphlets Received 408

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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VINOLIA SOAP,

PAGE 25.

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Original Articles.

THE CONSERVATIVE VALUE OF THE PLAY-IMPULSE.[1]

BY IRVING C. ROSSE, M.D., WASHINGTON, D.C.

Some years ago, when helping to write the surgical history of the late Civil War, I had occasion to study, among other things, about ten thousand cases of fractures of the skull. Needless to say that after several months' application I found myself becoming morbid; the sight of any broken object, as a fractured glass or a flag-stone in the street, instantly suggested visions of all sorts of head injuries with their sequences of dizziness, epilepsy, and paralysis; while the hypnagogic hallucinations that usually precede sleep were more or less tinctured by these notions.

Acting upon the principle of doing the most frivolous thing I could think of to offset this condition, I immediately entered the swim of the gay world, and turned my attention to athletic sport. The effect was soon restorative, and led to some of the reflections that form the burden of this paper.

Old and common hackneyed similies are often none the less condensed propositions of important practical truths bearing on the subject in hand. For instance the bow shoots all the better for being unbent at times, and we all recognize the wisdom and propriety of the homely adage, "All work and no play makes Jack a dull boy," and the little nonsense now and then relished by the wisest. finds its counterpart in the Horatian maxim, "*Sunt etiam musis suæ ludicræ.*" So why should not we with a reflexive object put aside for a while the study and contemplation of neuropathic conditions, and the dismal and discouraging cases afforded by the decay of the nerve elements, which many of our members write about in style of impressive Latinity and Hellenic elegance, and turn our minds to a consideration of some of the causes procreant and conservant which concern the well-being of the next generation, and enable us to keep or preserve from decay or injury, within reasonable limits, the existent health of the present?

In studying the comparative physiology of the sentient organism we find the play-instinct in various animals as the zoölogical scale is ascended. The ludicrous performances of spiders is more suggestive of incitation than of any other imaginable purpose, says Romanes, while no less a person than the illustrious author of the "Descent of Man" writes with fulness and particularity upon the love-antics of birds; and others since his time have commented upon the play-impulse in discussing the theory of natural and of sexual selection, which Darwin says acts throughout all the higher division of the animal kingdom.

We recall from childhood days the skip and play of the gay young lambs that our primers used to tell about, as well as the rompish sports and the festal pleasure of balls, routs and parties occurring in the heyday of life and marking red-letter days in our career, which go to show the existence of an impelling force inciting to the performance of actions not the result of reflection and manifesting themselves in the form of sport, frolic, gambol, recreation, pastime, or amusement.

Primitive tribes show the same disposition as ourselves to yield to the deep-planted instinct of play and amusement. Many of their forms of pastime and recreation differ from ours only in detail, being in fact only differentiated forms of the same tendency. An instance is a group of games to which our backgammon belongs. It is ancient and widely spread over the world, as the ancient Mexican game of *patolli*, which appears to be of Asiatic origin. I have also observed, in an ethnological way, similar instances of mimetism and the like, during a sojourn among the Eskimo of Bering Strait, and the Chuckchis of Arctic Siberia, among whom I found the game of football. The relativity of the latter fact may be of interest in connection with the remark of the Duke of Wellington, who said that Waterloo was won on the ball grounds of England. The Chuckchis are the only tribe of Northern Siberia who have not yielded to the Russians, and the existence of football among them may be looked upon as suggestive of the incitation that prompts the manly pastimes of a vigorous race.

In no people perhaps is the play-instinct more apparent than in the Japanese. Their country has been called "the play-ground of the world"; and, aside from being the most light-hearted people, recent events show their pluck and manliness to be worthy of admiration. It seems unnecessary to say more in order to justify the position that the play-impulse, deeply implanted in the race, is one of the motor activities evolved from the central nervous system, and that such manifestations of it, as we shall mention, are not only essential parts of life, but things that have a conservational tendency and make life worth living.

Analogous facts may be adduced to show the disappearance of epidemic affection among soldiers and others when rigid discipline has been relaxed. The statistics of military medicine furnish numerous instances. I recall an epidemic of boils which occurred on board one of the Naval Academy training-ships. On allowing the boys liberty ashore, where they required no incentive to indulge in fitting sport, the epidemic soon disappeared.

The recreative effects of change by breaking up monotony in the treatment of many nervous diseases is so well known to physicians that some of them go so far as to say that an occasional spree benefits health, and Hufeland even says that it prolongs life. The question of relative longevity of English and American public men was investigated some time ago by my friend Dr. Charles K. Mills, of Philadelphia, who stated, in a lecture at the Smithsonian Institution, that the average usefulness and longevity of English public men exceeds that of American by ten years. Most men in public life in England are among the best and keenest sportsmen. Imagine the effect on his constituents of one of our hayseed senators in a pink coat, riding to the hounds, or frequenting the golf links with the British ambassador.

Notwithstanding these well-recognized facts of sport and play the deep interest that should be felt in the people's amusements still awaits a champion; and a philosophical study looking to the furtherance of the great cause of innocent recreation most fit for health is yet a virgin science badly in need of an exponent.

Newspaper readers are enabled at all seasons of the year to learn of the fanatic folly which still possesses a certain large section of otherwise respectable and well-meaning persons who make vague statements and present statistics in the interest of various fanatical notions; but neurologists, who, as a class, are accustomed to turn on the electric light and examine into the dark corners of human weaknesses, occupy something of a vantage-point as regards temperance reformers, salvationists, and other oddities who would have enacted sumptuary laws that interfere with innocent pleasures of the people to the extent of restricting personal liberty.

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[1] Read at a Meeting of the American Neurological Association, Boston, June 5–8, 1895.

Aside from the fanaticism shown in the question of alcoholic intemperance, which we have always with us, nowhere do we find such distortion of facts and temerity of language as in the howl set up against athleticism and the out-of-door sports and pastimes of the present day. Although they mark the rejuvenescence of individual and phylogenic good, it is common to hear and read intemperate denunciations against exercise and training as well as unreasonable claims in their favor. But there is consolation in knowing that the truth lies between the two extremes, and that many of the popular fallacies prevailing in the community at large and even among medical men, are owing mainly to the fact that heretofore most of the published opinions have emanated either from sporting men who knew nothing of medicine, or from physicians lacking in practical acquaintance with athletic sports.

One of the more current of these fallacies and the most difficult to down is that athletes are subject to organic disease and die young. Some years ago, in a paper embodying the experience of thirty years, read before the American Medical Association in Cincinnati,[2] I endeavored to controvert this erroneous notion by citing many examples of athletes who had lived to a hale and hearty old age. These cases cited by way of disproof can hardly be exceptional, since the exceptions in regard to the matter are, like those in Professor Sophocles' Greek Grammar, coextensive with the rule. Moreover, my information has been supplemented by other observers in the same line, notably Sir Morell MacKenzie, who shortly before his death wrote me a very complimentary letter in which he expressed his gratification that we agreed on the subject. Another example of a very old athlete who died at the age of eighty, is the former champion of the prize-ring of England, John Gully, the grandfather of the present Speaker of the House of Commons.

I cannot leave this part of my subject without mentioning in connection therewith one of the most delightful amusements and useful accomplishments, concerning which I may show more than ordinary enthusiasm. The educational, hygienic and even curative advantages of aquatic sports, more especially swimming, are beyond question. Aside from being an aid to physical development the acquirement and exercise of pushing angry waves aside, in addition to accrued physical benefit, goes a great way towards strengthening self-possession, and contributes more than any other manly pastime to the cold-blooded quiet and absolute presence of mind which enable us to avoid or conquer danger or lend ourselves to an act of devotion. I may say, I trust, with pardonable vanity, that through knowing how to swim I have jumped overboard from a ship in the mid-Atlantic; plunged into the icy waters of Kotzebue Sound inside the Arctic Circle; and, better than all, have the proud satisfaction of saving a number of persons from drowning. I should say that the art of swimming is rather mental than physical, and that many persons though able to swim, are drowned in consequence of psychic disturbance or from becoming "gallied," if I may be allowed the very expressive phrase used by whalemen. The finest specimen of a black Hercules that I have ever seen was drowned at Fort Monroe a few years since, through inability to swim, when a few strokes would have saved his life. Since so many benefits accrue and many lives may be saved by only a moderate knowledge of an easily acquired art that is one-third muscle and two-thirds intelligence, it is lamentable in this practical age that so little heed attaches to the prophylactic and conservant value of swimming. A few years ago, in a paper at Newport, R. I., I called attention to the frequency of drowning accidents.[3] The paper appeared in several of the great daily journals of the Eastern cities, and was used as an advertisement by the enterprising proprietor of a swimming pool in Providence, and also by another in Salt Lake City.

Later, in treating the medico-legal relation of death from submersion,[4] I refer to modern statistics, which show the great development of this class of emergency, than which none is of more startling character. They are none the worse for repetition.

In France between four and five thousand cases of this kind of accident are officially recognized each year, which is about one-third of all the accidental deaths, and the number appears to increase yearly. Nearly the same figures apply to the inland waters of England and Wales, not including the coast. The Board of Trade return shows that out of 86,695 seamen who died in English ships abroad, 56,673 were drowned, and a late report of the Fisherman's Federation places the number drowned in the inland waters and upon the immediate coasts of the United Kingdom and the adjacent islands as 6,268 annually. The many hundreds drowned in the *Victoria* disaster, in the great storm that swept the British Isles two years ago, and in the late foundering of the *Elbe* and the *Reina Regente* are matters of current knowledge. In our own country accounts of drowning are of daily occurrence, more particularly in summer, when one can scarcely take up a newspaper without seeing such accounts. Not only does the sea claim its numerous victims, but the great floods and cyclones have destroyed thousands, while on the lakes and rivers drowning accidents are lamentably frequent. If the statistics of such accidents were as available as those of the late war for instance, the exhibit would doubtless be surprising. Where the aggregate of killed in action is shown to be 67,058, there were drowned 106 officers and 4,848 men. The small regular army lost 5 officers and 89 men from this cause; the negro troops, 6 officers and 289 men; and the volunteers furnished a large contingent, the State of Ohio alone having lost 14 officers and 770 men from drowning.

The object in reciting these observations is to emphasize the fact that the great majority of such accidents are preventable; as most of them occur in such circumstances as fording a stream, crossing narrow rivers, by the upsetting of small boats, or from falling overboard, when a few strokes only would suffice to save life.

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[2] Popular Fallacies regarding Athletes and Athletic Exercises, Journal American Medical Association, April 27, 1889.

[3] Bathing and Boating Accidents, Journal American Medical Association, June 27, 1889.

[4] Witthaus and Becker's Medical Jurisprudence, vol. i.

As a curative means this form of exercise merits high praise. Increased activity of the heart and lungs, the action of muscles not ordinarily used, the tonic effect of cold immersion, exposure of the naked body to the actinism of sunlight, and an exhilaration akin to flying, are conditions that conduce to the elimination of urea, and the abolition of dyspepsia and insomnia, and are superior to the tent-cure, to massage, electricity, or drugs. Chorea and hysteria I have known to be cured after a course of swimming, and my experience as a neurologist leads me to recommend this form of exercise as one of the best adjuvants in the treatment of functional nervous diseases. I shall not attempt to discuss possible objections to a sport that may harm a few yet benefit a thousand, but must say that if more educational attention were given to this form of recreation we should have fewer cases of neurasthenia, not so many flabby hearts and lungs, and a lesser number of torpid minds.

And so I might include in this enumeration the whole "Badmington Library of Sports," as polo, shooting, playing tennis and golf, and cycling, the beneficial effects of which latter sport has been so ably touched upon by our worthy secretary, Dr. G. M. Hammond.

There comes, however, in connection with the development of my subject, the question of that most innocent and delightful amusement afforded by sportive motion regulated by music.

The exercise of this instinct, symbolical of joy and delight, has incurred *odium theologicum* in the past, and we find cranks and sham pious denounce its manifestation as a wicked thing, because in their prudish and evil-thinking minds there still lingers the puritanical spirit which calls anything sinful that makes people feel happy.

This special mode of manifestation of the play-impulse does not appear to have claimed much attention, serious or otherwise, from either biologist or physician. Although the latter functionary is so often questioned as to the effect of dancing upon the health and morals, I do not find, among large collections of medical works, that any physician has had the boldness to treat this apparently frivolous subject with ordinary seriousness and place the same on record. Yet, in an unpublished letter of General Washington, lately shown to me by the Assistant Librarian of Congress, Mr. P. Lee Phillips, the dignified Father of his Country gives his declining years as an excuse for not attending an assembly, but, at the same time, mentions dancing as "so agreeable and innocent an amusement."

One of the deepest-rooted instincts of our race is the spontaneous activity shown in the wish to jump in symmetrical combinations. A succession of cadenced movements of the body, regulated by music, vocal or instrumental, and done commonly with the reflexive object of either exercise or amusement, has been performed among all peoples from primitive times, and has been concerned in all the actions of life.

Biblical and literary references to tripudiary acts are almost too common to require mention. This manifestation of feeling in its bodily discharge was indulged in by Miriam and Moses, and David danced before the Ark. The priests of Osiris had their astronomic dances; with a view to bringing about a happy concurrence of the stars the Indians and Chinese admitted dancing into their theogonies and cosmogonies; Livy speaks of it as a means of placating the gods during the pest at Rome; during the epidemics and disasters of the Middle Ages ignorant and pious terror attempted to abate pestilence by the atrocious spectacle of the Macabre dance, or dance of death; and religions have always sought to exalt nervous sensibility upon which dancing has a powerful action, to the profit of the dogmatic idea. Choregraphical performances have attended all the stages of social evolution, and all the expression of joyous excitement, Pyrrhic, Bacchanal, hymeneal and sacred.

Dancing, ranked with poetry by Aristotle, and according to Homer the sweetest and most perfect of human enjoyments, still forms the base of religious ceremonies among the rudest savages; but for civilized people it is a frivolous and innocent amusement highly conducive to decency, elegance and politeness, and acting by virtue of the threefold enjoyment provoked by the organic pleasure of the exercise, the effect of the music, and the enjoyment caused by the reunion of the sexes.

The recreative exercise of dancing has been regarded by certain ascetic and lugubrious persons as very dangerous to youth, and it is common to hear from the vantage-ground of religion ribald utterances concerning the cardinal sin of dancing, the devil's procession, and the like. Nevertheless, there are among the sound and faithful those that incline in this respect to the statements of some of the Fathers, who represent the angels to be always dancing, and the glorious company of the apostles in reality a chorus of dancers. But admitting the principle that concedes the worthlessness of a lame man's opinion of dancing, the connotation from the moral point of view may be at once dismissed, since it little concerns the physician.

Dancing being one of the most spirited of innocent amusements is, at the same time, one of the most useful gymnastic exercises. In this relation several legislators of antiquity concerned themselves; and Tissot recommends dancing as a part of physical education in colleges. Its physical influence upon youth, with whom sportal movement is a necessity as imperious as the play-impulse that prompts all young animals, is advantageous by the light diversion of nervous energy which, by the effect of study, tends to accumulate in the brain to the detriment of other organs. At the same time, the effect of music causes an agreeable sensation of well-being from which a fortifying nervous action must accrue. Added to the nervous and vascular excitement of the exercise, the reaction from which stimulates and strengthens all the living parts, there is the circumstance of the reunion of the sexes, which develops and enlivens the imagination, causes a happy dissipation of melancholy ideas, and brings into being and excites the passion of love. It cannot be gainsaid that love affairs are among the most important affairs of life, since they decide the make-up of the next generation; consequently everything relating thereto merits serious attention from all thoughtful persons.

The opposite sex is usually associated with dancing, and it is particularly in women that it is desirable and useful to procure grace and ease of movement while joining agreeable distraction to salutary exercise. Women obliged to lead workday lives, as seamtresses, washerwomen, and shop-girls, procure enjoyment from dancing that counterbalances somewhat their monotonous existence; while the more luxuriously placed, especially young girls of sedentary habits, whose gastric and uterine functions are deranged by want of bodily exercise, may break this inaction of body so prejudicial to health by the exercise of dancing, which calls the blood to the periphery to the benefit of the uterine and abdominal regions, and, at the same time, diminishes nervous susceptibility. Dancing is also useful to excite fecundity in young married women by developing the natural sensibility of the generative organs. Yet the exercise should not be indulged in during menstruation, or gestation, or when nursing. It is, moreover, hurtful in inflammatory affections, in advanced engorgements of the organs, in organic pulmonary or cardiac troubles, and it should be interdicted to persons affected with aneurism, or subject to hemorrhages. On the other hand, dancing may be used to hygienic advantage, and even as a therapeutic means. The celebrated navigator, Captain Cook, claims to have reduced the mortality of his crews to ordinary chances by making the men dance on deck as a means of distraction during calm weather. A few years ago the leading physicians of New York City who had distinguished themselves in a gynecological way, were interviewed on the subject by an enterprising reporter of one of the large dailies, and the result appears to be an absolute consension of opinion as to the good to be derived from this exercise.

Regarded in the category of a medicament, dancing may be advantageously employed in all maladies where it is necessary to excite, to strengthen, or to provoke abundant cutaneous exhalation.

In scrofulous diseases, where all the organic apparatus is atonically impressed, and all the metabolic functions are slow and irregular, dancing often repeated is one of the first curative means.

Anemia, chlorosis, amenorrhea, and all functional derangements of the uterus depending on its weakness also call imperatively for the employment of dancing. In fact, most diseases attended by complete uterine inertia need the energetic excitement to double action such as dancing affords.

Flabby fatness, so much dreaded by many women, and dependent entirely on relaxation of the tissues, demands the employment of a mechanical excitement that shall stimulate the respiratory and circulatory organs, and reanimate the activity of the absorbent vessels, and thereby effect the return into the circulation of the stagnant fluids from the cellular tissue, to be afterwards exhaled through the skin and lungs.

The good effects of dancing in mental and nervous diseases are witnessed in the balls given to inmates of insane asylums. It acts as a powerful remedy in melancholia and hypochondria by changing the order of ideas and scattering morbid fancies. Somnambulism and nightmare occurring in persons of full habit who take but little exercise are more effectually broken up by this active exercise than by the administration of drugs. Neuralgia, chronic rheumatism, gouty affections, and many ailments owing to suppressed secretions are also benefited. The spasmodic affections of women dependent on the predominance of the nervous over the muscular system, find in dancing a remedy as sure as agreeable; and the antispasmodics, tonics, etc., usually given in such cases may be replaced by inspiriting music and the aspect of an exercise that, at the same time, gratifies the imagination.

In establishing the lost tone of the stomach, and as an efficacious remedy in polysarca, if often repeated and long continued, dancing is to be commended. In lymphatic subjects it also heals certain migraines and habitual pains in the head. Obstinate quartan intermittent fever, in which the attack holds on merely on account of the morbific habit, is also reported to have yielded to the exercise of dancing taken at the beginning of the attack, which, in consequence of the lively exercise and profuse perspiration, is not only broken up, but fails to reappear.

The caprices and infatuations of dancing require no extenuating comments, nor do the evil effects of promiscuous balls, since it is the bad accessories that impose limitations and not the dancing that exercises a baneful effect. Because the Prodigal Son indulged in the wassail bowl and roistering festivity while he and his friends danced, is no reason why the innocent son and his friends must never dance. Aside from these considerations, the innocent amusement of the dance under favorable circumstances improves the body, breaks up the vices of the mind and inspires happy confidence; and it is, moreover, an agreeable diversion like golf, tennis, and other sports suited to all sorts and conditions of life.

Just as long as mankind is endowed with the faculty of emotional expression so will its demonstration in various forms continue to manifest itself. As a rule, people must and will divert and amuse themselves, and nobody can prevent them. But in these days of excessive drive and overpressure, when undue waste of vital energy shows itself to the clinical observation of the neurologist in the way of various nervous and brain diseases, the question of averting or mitigating such mischief comes to us as a serious problem.

The obvious solution lies in the encouragement of all innocent recreations as a compensating factor in the phenomena of life. If we want to keep up the spirit of a race in which runs the blood of Robin Hood and the old Viking kings, the palestric element must enter into its pastimes. If we would hold the trident of Neptune and have a long run on the world's political stage "the man behind the gun," as well as the political ruler, will be none the worse for having been trained in the manly school of rude play and rompish sport.

Therefore, we should do all we can to further the great cause of innocent sport and recreation that bring together men and women of the leisure class at such places as the tennis court, the hunt, the meet, the golf links. In the light of more humanistic ideals of the present day, we do not admit the ethical cogency that such amusements are wrong because they are worldly. We should strive to reach the people with a simple word or two expounding "the gospel of relaxation," with a view to make life better, and make human actions abler when prompted by the two great motor forces of life which incite in our subliminal-self the source and spring of all human actions, namely, the preservation of the individual and the continuance of the species.

A Valuable Contribution to Military History.— It is reported that Prof. Joseph Jones, of New Orleans, is engaged in the compilation of a medical history and roster of the medical department of the Confederacy, with biographical notices of its principal surgeons. The work will be presented at the next session of the Confederate Veterans.

CARCINOMA OF THE CARDIAC END OF THE STOMACH.

BY ALBERT N. BLODGETT, M.D., BOSTON.

The following paper is founded upon a case which was quite unique in my experience, and of which I have been able to find only very few recorded examples. The patient was seen repeatedly in consultation by Dr. R. W. Lovett, who corroborated my observations, and kindly made valuable suggestions in temporary treatment and prospective surgical procedure, and to whom I here wish to record my sense of grateful obligation. The following is an outline of the principal features of the clinical aspect of the case, condensed from my records:

March 31, 1894. Patient is a Swede, age forty-seven years, and referred to me on account of supposed "consumption." He states that he has been in this country for the past twenty-six years, and has always been well until a period about four months ago. He denies any sickness or disease except those of childhood, and especially denies syphilis, of which there is no indication or suspicion. His own complaint is of "dyspepsia." His family history is in no way remarkable, and has no apparent bearing, on his present condition. He has two children, the youngest at present aged sixteen, who are both well and strong. He has worked very hard, first as seaman, and later for many years in a brewery. He says that he has never abused malt or spirituous liquors. He states that he has felt ill since Christmas, 1893. The symptoms at that time consisted in a slight feeling of obstruction in swallowing, especially solids, which has persisted, and has gradually become more pronounced, until he is at present entirely unable to swallow anything except fluids, or very soft substances. On attempting to swallow solids, the food disappears as if it went into the stomach, but is almost immediately regurgitated, without admixture with other substances, and unchanged in character. At times, when he feels worse than usual, fluids are also rejected. He has become gradually thinner, and has lost strength to a marked degree. He is thirty pounds lighter than at Christmas. There has been no cough, expectoration or night-sweat, no chill, and no fever. Pulse and temperature are normal; bowels are regular, though stools are small in amount. Peristalsis is active, and visible through the thin abdominal wall. Sleep is quiet and prolonged, as if patient were excessively fatigued. Physical examination reveals nothing abnormal in chest. Ribs prominent, on account of emaciation. Liver area normal or possibly slightly contracted, and there is marked retraction of the abdomen. Across the epigastric region in a direction from the left toward the right, is a distinct, hard ridge, three centimetres in diameter, which is felt issuing from beneath the left costal border near the nipple line. This curves downward and slightly to the right, toward the median line, whence it extends to the border of the right epigastric region, where it becomes indistinct and is lost. Between the edge of this ridge and the dulness of the liver is an area of clear resonance on percussion. Pressure over any part of the mass is painful, the distress being referred to a point in the epigastrium near the end of the xyphoid cartilage. No enlarged glands are discovered in the axilla, groin, or mesenteric region.

April 15th. Patient states that he has never vomited nor has he passed any blood by stool. Pain has been continually present, but is not more acute than at last report. Weight 130 pounds. Emaciation is more pronounced than heretofore. The outline of the growth is not materially different from that described, though the density and prominence of the tumor is more marked. At this time Dr. Lovett kindly saw the patient in consultation, and verified the condition. He sustained the diagnosis of probable carcinoma of the cardia. The character of the disease was explained to the patient, and the probable course and termination of the malady was clearly set before him. Immediate operation was advised, but the patient would not listen to suggested gastrostomy as long as he could swallow enough food to sustain life.

May 12th. Patient was comparatively comfortable until about ten days ago, when he began to experience shooting pains in the vicinity of the epigastrium. These have since persisted, and have extended into the region of the loins, buttocks, thighs and pelvis. Appetite is about the same; the patient takes food as well as at last report. Sleep is reported as fairly good, but the general condition of the patient is not so favorable, and he is evidently failing in strength and flesh. Cachexia is now apparent, and patient is practically entirely disabled. Heart is normal, pulse 72, respiration normal when not interrupted by groans and sighs. The left epigastric region is the seat of great tenderness on pressure. No vomiting or tenesmus. The stools are yellow. The patient complains chiefly of recurrent attacks of agonizing pain and increasing debility. Speedy operation is now considered *conditio vitalis.*

June 9th. The condition of the patient has gradually become more serious since the last report. Pain has increased, and swallowing has become more and more difficult, until at present, and for two days past, the patient declares that nothing which he swallows reaches the stomach. All food taken is at once rejected in an unchanged condition. The tumor is more prominent than at last report, and is hard and unyielding in consistency. It can be felt retreating toward the ribs on the left side, and is lost beneath the costal border, at the left of the ensiform appendix. There is a well-marked caput medusæ, and the color of the surface is faintly livid.

June 20th. Soon after the last record the patient began to swallow fluids and the pain in the region of the stomach became less intense. At the same time a moderate diarrhea with offensive stools commenced, which continued as long as the patient lived. From this time, there was never again complete occlusion of the passage into the stomach, though there were periods when swallowing was considerably hindered, and was painful. These periods would end in a sharp attack of diarrhea, when the stenosis would become less troublesome, and the patient could again take food as well as before.

July 16th. Patient has had no recurrence of the gastric stenosis, and states that he has suffered little from pain, although there are periods of distress and cramping of spasmodic character, due in part, he thinks, to the motions of the abdominal viscera, especially intestinal peristalsis. He now takes liquid food, not only without obstruction or distress, but with positive relish. He is weaker, but is in good spirits though much emaciated and very anemic. There is now noticeable considerable enlargement of the inguinal glands, and pressure over the abdomen is painful, probably from implication of the mesenteric or other glands. Neither spleen, liver, pancreas nor kidneys afford any indication of metastasis.

August 3d. The signs of advancing malignancy are more pronounced. There is swelling and induration of the axillary glands, and of the supraclavicular lymphatics, and the course of the veins may be plainly traced over the surface of the thorax and abdomen. The patient suffers no pain, but is rapidly becoming exhausted.

He continued in much the same condition, and died September 9th, about six months after coming under observation. An autopsy was much desired, but unfortunately was not obtained. It was learned, however, that the patient suffered no pain, nor was there marked agony at the end, but death seemed to follow from sheer exhaustion.

The only definite allusions to cancer of the cardiac end of the stomach which I have been able to find in the literature of this subject are the following, compiled from the original reports of the cases. These are to some degree doubtless questionable as to correctness, as has been stated by Hilton Fagge, so that their absolute value as to the frequency of the disease may be diminished to some extent. All the evidence seems to point, however, toward the fact that this seat of cancerous development is one of the rarer locations in the body. The outlines of the heretofore recorded cases are as follows:

I. M. Lepelletier[1] presented the stomach of a man who for a long time had vomited directly after taking any form of nourishment, and in which digestion had become impossible. The patient was emaciated to a most extraordinary degree. At the autopsy an enormous cancer of the cardia was found. The patient had been accustomed to swallow balls made of lead, in order to dilate the cardia to a sufficient degree to permit deglutition, and one of the balls was found at the autopsy. There was also a tumor of the convex surface of the liver, which had pierced the tissues of the diaphragm, including the peritoneum and the pleura, forming a diaphragmatic heptocele. The growth had also penetrated into the intestine.

II. Lannois and Courmon[2] report the following case in a man, aged seventy-seven. His illness began five months previously, with diarrhea which lasted a month, and with difficulty in swallowing. On admission he could only swallow liquids. The obstruction was at 36 centimetres from the teeth. There was now obstinate constipation. Nothing abnormal was found in the abdomen, except perhaps a diffuse resistance later, to the right of the xyphoid cartilage. There was no jaundice. At the autopsy a tumor was found in the lower part of the esophagus, producing almost complete obstruction; the microscope showed it to be a squamous epithelioma. In the duodenum and about the papilla a soft tumor was present. The pancreas and liver with their ducts were absolutely healthy. This tumor was a columnar carcinoma, and apparently presented a similar degree of invasion as the esophageal growth. Some 13 cases of two primary independent malignant neoplasms are on record. The duodenal growth here was considerably larger than usual. It is the rule in these cases to have no biliary obstruction owing to the softness of the growth, but there are exceptions.

III. Dr. Henry P. Loomis[3] presented the specimen. The patient was a man, fifty-three years old, who had an excellent family history, and also a good previous history, except that he said he had had a slight bronchitis for many years. His last illness began with anorexia, uneasiness in the epigastrium, and slight vomiting. The pain was most intense in the left hypochondriac region, and near the xyphoid cartilage. For two months he could only take solid food with difficulty, and then finding that solid food caused pain, he swallowed nothing but oatmeal and milk. On admission he was very greatly emaciated, had a haggard, apathetic expression, and vomited curdled milk. Physical examination of the abdomen showed an area of flatness about four inches in diameter, with its centre one inch below the xyphoid cartilage. The autopsy was made thirty-six hours after death. No pathological lesion was found in any of the organs or tissues until the stomach and esophagus were opened. A firm, dense, cancerous infiltration was found in the wall of the lower portion of the esophagus and the esophageal end of the stomach. About three inches of their walls were infiltrated with a dense mass, which narrowed the opening of the esophagus into the stomach to such a degree that it was with diffiulty that an ordinary penholder could be introduced down the esophagus. There was no ulceration or involvement of the rest of the stomach wall. The infiltration presented the ordinary appearance of a scirrhous cancer. There was marked atrophy of the intestines. The patient apparently died of inanition due to mechanical obstruction which interfered with the introduction of food into the stomach. The extreme narrowing of the tube was due partly to infiltration and partly to the contraction of the newly-formed connective tissue as the result of the irritation of the new growth. The dense infiltration no doubt produced the feeling of obstruction which was constantly referred to by the patient during life. The absence of ulceration was unusual. The esophagus and stomach at the site of the cancer were tightly bound to the cellular tissue behind them. The tumor was diagnosticated during life, and an operation advised. If this advice had been followed, no doubt the patient's life would have been prolonged considerably by the establishment of a gastric fistula.

IV. Dr. James Tyson[4] presented the specimens, from H. W., aged seventy years, a Pennsylvanian. "He has been apparently healthy, except as to occasional attacks of rheumatism, until about the middle of June, 1872, when he began to complain of a dull burning pain in the epigastrium, which continued and became worse after eating, when a sense of distention and weight was superadded. Later, he vomited his food, and complained of nausea at times, especially in the morning before eating. Occasionally, also, he vomited small quantities of blood. His bowels were obstinately constipated, being often without a dejection for five or six days. There was exquisite tenderness in the epigastrium, and percussion-dulness in the median line, two and one-half inches below the end of the ensiform cartilage, and thence towards the left to the edges of the ribs, and towards the right also as far as the edges of the ribs but an inch lower down. There was, however, no sense of a tumor communicated on palpation. About the 10th of September it became quite impossible for him to retain any solid food, when he was restricted to a diet of milk, of which he took a pint daily in divided portions. Thus administered, the milk was retained; and the plan was so successful that the quantity was soon increased to a quart daily. About the 26th, however, he was no longer able to retain the milk in any quantity, while he seemed to reject it, not by an act of vomiting, but by a species of regurgitation. Thenceforward, emaciation progressed, and he died on October 18, 1872. The post-mortem examination was made six and one-half hours after death. On opening the abdomen, no visible derangement was present, until the omentum was removed, when a white, glistening prominence was noticed, which proved to be the pyloric end of the stomach, thickened to the extent of an inch in section, and for two and one-half inches towards the centre of the stomach. The cardiac end was similarly involved and to a like degree, while the body of the stomach was normal. To the naked eye the appearances were rather those of a hypertrophy of the muscular substance of the organ in these situations." [Remarks. The regurgitation of the food here noticed is probably explicable by the condition of the cardiac orifice of the organ. The temporary relief derived from the milk treatment is quite in accordance with recent experience in similar cases.]

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[1] Société Anatomique, Paris, July and August, 1848.

[2] Rev. de Méd., April, 1894.

[3] Medical Record, New York, August 11, 1894, p. 185.

[4] Transactions of the Pathological Society of Philadelphia, vol. iv, p. 84.

V. The following are the notes of a case under the care of Dr. J. Allden-Owles.[5] "Mrs. L. was first seen by me in February, 1884. She was low in statue and small in limb; was a widow in her fifty-third year; had one child aged nineteen. She had enjoyed good health up to the time of twelve months' previously to being seen. She then began to have difficulty in swallowing food; and from the symptoms she exhibited I arrived at the conclusion that the esophagus was probably the seat of malignant disease, in which opinion I was supported by Dr. Habershon, who saw the case in consultation. On November 5th, I passed a gum-elastic esophageal bougie, No. 3, a short distance beyond the cricoid cartilage, farther than which it would not go without the exercise of more force than would have been justifiable. Upon withdrawing it there was a little blood at the tip. The dysphagia was increased for the next two days; and in consequence of this the patient refused to have another bougie passed. After some days, however, the discomfort subsided and deglutition became easier. Previous to this, that is, for several months, the disease had made but little progress, and temporary relief had followed the use of the various remedies, such as bismuth, hydrocyanic acid, creasote, and others. Examination of the ejecta under the microscope showed the presence of a great deal of squamous epithelium; the ejecta consisted of undigested food, with a large quantity of glairy mucus, probably chiefly saliva which had collected in the esophagus. One enlarged gland over the left breast was detected about this time. In the end of February, 1885, the patient suffered from acute pain in the gastric region. A careful examination could detect no distinct swelling or tenderness, although the beginning of emaciation favored the discovery of anything abnormal; but there was some suspicion of thickening at the esophageal opening of the stomach, inasmuch as on careful listening, the passage of fluids into the stomach was accompanied by a gurgling sound which was unnatural. On March 10th Dr. Klein examined the ejecta, and he reported that they did not come from the stomach; there were no sarcinæ, there was no blood, and no positive evidence under the microscope of malignant disease.

"For another four months the patient continued fairly well; but early in July a sudden change occurred, excessive vomiting setting in, accompanied with hemorrhage. At this time she was seen by Sir W. Gull in consultation, by whom my opinion of the case was confirmed. The patient rallied again after this, and was fairly well until October, when she became worse. At this time some disaffected ladies said that as the eminent consultants, who had seen the patient, were biased by me, it was better to see some other able practitioner without me. This was acted on, and the patient passed out of my hands, and the history of the case is completed from the reports of others. She continued much as before until Christmas, 1885, and was seen once prior to that date by Sir Andrew Clark, but early in the present year the symptoms became worse and the end seemed near. The vomiting was almost constant and abundant; the pain was excessive, necessitating the hypodermic injections of morphia in large and repeated doses, and the dysphagia was so great that for about a fortnight she was nourished entirely by enemata — a means to which she had much repugnance. Then some relief to her symptoms suddenly ensued, and in consequence of her ability to take large quantities of nourishment, and the constant use of morphia with other things, the patient lingered till June, 1886, a period of probably quite three years from the commencement of her illness.

"A post-mortem was arranged, and I was present at the request of the executors; and extensive malignant disease of the lower third of the esophagus was found, together with much glandular enlargement of the anterior mediastinum. A portion of the disease was submitted to Dr. Klein, who reported as follows: 'The microscopic examination of the sections showed that the mucous membrane is permeated in all its layers by clusters and streaks of epithelial cells, extending even amongst and between the bundles of non-striated muscular tissue; some of the streaks resemble tubes lined with epithelium, and their cavities filled with loosely aggregated epithelial cells. In many of the clusters, cell-nests characteristic of epithelioma could be clearly recognized. The following points are worthy of note; the comparative rarity of esophageal diseases; the variety of epithelium as an aid to diagnosis; the detection of only one enlarged gland in the whole course of the disease; the use of the bougie and its beneficial results; the widening or removal of the stricture in the later stages of the disease, and its bearing on the prognosis in such cases, and the explanations of it; the duration, probably three years, mainly due to the ability to take food, and the use of morphia; the *pros* and *cons* of gastrostomy or other operations. Dr. Owles said that the patient at an early period of her illness expressed herself strenuously against submitting to any operative interference, so that he considered it futile to press the question of gastrostomy.'"

VI. W. T. Gairuder,[6] contributes the following report:

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[5] The Medical Press and Circular, November 17, 1886, p. 427.

[6] Monthly Journal of Medical Science, vol. xix, July, 1854, p. 79.

"The cancer of the cardia and of the cardiac end of the stomach, and of the lower part of the esophagus, was in an ulcerated condition. The pericardium was found thickened, and the pleura contained recent lymph, and was full of fluid. The case was not correctly appreciated during life. There was intense emaciation, but no dysphagia or vomiting. The patient had little appetite and appeared to be phthisical. He suffered from cough, and had effusion into the pleura, which had been evacuated several times to the amount of one or two pints. The preparation showed that the ulcerated opening of the stomach was quite pervious, and thus the absence of dysphagia was explained. Diarrhea, resembling that found in phthisis, had been a prominent symptom; but though old tubercles were found in both lungs, and ulceration of the small and great intestines, the ulcers were rather of a dysenteric than of a phthisical character."

VII. Ferguson,[7] reports the following case:

"The patient had suffered from pain in the epigastrium and back which was aggravated by the presence of food in the stomach. Subsequently there was vomiting. When admitted to the hospital, although fairly well nourished, she had lost flesh to a marked degree, her appearance was cachectic, and she suffered constant pain in the back and epigastrium. All solid food was rejected by the stomach. She had hematemesis at one period, recurring repeatedly every day for three weeks. Nourishment was given principally by the rectum. A diagnosis of cancer of the stomach was made. She died on the 29th of January, 1884. Full one-third of the cardiac portion of the stomach was found ulcerated, the ulceration also involving the lower end of the esophagus. There were no enlarged glands in the neighborhood of the growth, and no secondary deposits in other organs."

VIII. At a meeting of the Society for Medical Improvement, Dr. Jackson[8] showed a specimen of cancer of the cardiac end of the stomach with the following history:

"Mrs. B., died February 27th, aged fifty-three. She was a small, spare, tough woman, and passed all her life in this region. At twenty-two she married, and had nine healthy children. Catamenia ceased at forty-four. She worked very hard; had always a good appetite; but her food often distressed her after meals, so that she 'had dyspepsia ever since she was a girl.' She was hardly ever known to vomit; and during her pregnancies she was well, and never had nausea. Until she became sick, could never relish acids — as vinegar, cider, or even an apple — then, these were particularly grateful to her. I can get no trace of cancer in her family. In August, 1859, she had so much distress in the region of the stomach and esophagus, that she commenced taking homeopathic remedies, which she continued till near the close of life. There was no improvement of her suffering, and in the spring of 1860 there was nausea and sometimes vomiting; and by July the vomiting was constant on taking food. In December she complained of no pain except a peculiar distress which came on a few minutes after taking food, and was generally relieved by its coming back again. There was not at this time any hardness to be felt in or around the stomach; nor was there any ever discovered; nor was there much tenderness at the epigastrium. The settled opinion seemed to be when I first saw her in December that she had a stricture of the esophagus. This arose from the fact that she persistently felt and said that the food stopped a little more than half-way down the esophagus — putting her hand to mark the exact spot; so circumscribed was the pain, and so confident was she that the stoppage was there that it had to be believed. She was at this period taking liquids and pap, literally all the time, and vomiting nine-tenths of it again, within ten minutes, alleging that it had stopped half-way, 'just there.' Exploration of the esophagus with instruments of various kinds, discovered no resistance whatever. Still, the same experience went on to the last, and the patient was sure the food went only so far, and from that spot was thrown back. For the last two months she took large quantities of food, and her relish was keen, being nothing hurt by the constant ejection of what was taken. Five days before death she raised about a pint of dark, bloody, grumous mucus, somewhat, but not very offensive, and this was the only time anything of the kind appeared — or anything but food. Until a few days before the close, she kept about the house, and on the whole, I think suffered less pain than any other victim of this disease I have seen. Except the stomach, the organs of the body were found remarkably healthy. The cardiac portion of the stomach was in a state of open cancerous ulceration, to the extent of two and a half to three inches from the lower extremity of the esophagus, but the disease did not extend at all up the esophagus, and it was perfectly defined in the stomach, the rest of the organ being quite healthy. The general character of the structure was that of a firm encephaloid, and the surface of the ulcer uneven, and of a yellowish-white, opaque color; the edges were softer, raised somewhat, rounded and vascular. The esophagus throughout was quite healthy, being neither thickened nor dilated."

(To be continued.)

WHAT NUMBER OF CASES IS NECESSARY TO ELIMINATE THE EFFECT OF CHANCE IN MORTALITY STATISTICS, ESPECIALLY THOSE OF TYPHOID FEVER: A STATISTICAL STUDY.

BY MORTON PRINCE, M.D.,
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WITH a view to ascertaining to what extent chance may affect statistics gathered for the purpose of determining the mortality of any particular disease and incidentally the results of any special treatment as shown by such mortality, I have tabulated from the records of the Boston City Hospital, a long series of cases of typhoid fever — over 3,000 in number — this being a disease which hospital records render convenient for this purpose.

These cases have been divided into groups of different sizes — that is, into groups of fifties, hundreds, two-hundreds, etc., and the mortality computed for each group. In thus arranging them no selection, of course, has been made, but every case has been included, and the cases taken *chronologically* according to the time of entrance into the hospital. Thus each group represents a continuous sequence of cases.

According to the doctrine of chances, the larger the groups, the smaller the variations will be found to be between the rates of mortality of the individual groups. By increasing the size of the groups, other things being equal — that is, the conditions remaining the same — we should expect to find that with groups of a sufficiently large size, the mortality would be practically constant, and we should have a standard mortality; but, of course, the conditions do not remain the same. Nevertheless, we should expect to find that in groups containing a sufficiently large number of cases, these fluctuations would be reduced to a relatively small figure. The question is, What number of cases is necessary to eliminate variations due to chance and thus reduce the fluctuations to this degree?

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[7] New York Medical Journal, March 8, 1884, p. 277.
[8] Boston Medical and Surgical Journal, June 20, 1861, p. 332.

The results given in the following tables are only directly applicable to typhoid fever; to what extent they are true of other diseases can only be determined by a similar collection of statistics for each disease.

These tables do not take into consideration any variations that may possibly be due to different modes of treatment. It is assumed that the treatment or the effect of treatment upon the mortality has been essentially the same in all the series.

Between 1882 and 1893, 3,176 cases entered the hospital; of these, 412 died, a mortality of 12.66 per cent.

Arranging these cases chronologically by fifties, we have Table I. By this it will be seen that the highest mortality was 24 per cent. and the lowest two per cent., *a difference of* 22 *per cent.*

TABLE I.

Typhoid Fever in Boston City Hospital 1882–1893 Inclusive.

By Fifties.

	Cases	Dths.	%		Cases	Dths.	%
1882	50	10	20	1887–88	50	1	2
	50	7	14		50	9	18
	50	11	22	1888–89	50	8	16
	50	7	14		50	6	12
1882–83	50	9	18		50	8	16
	50	9	18	1889	50	4	8
	50	8	16		50	3	6
	50	7	14		50	7	14
1883–84	50	10	20		50	4	8
	50	9	18	1889–90	50	8	16
	50	3	6		50	5	10
	50	3	6		50	5	10
	50	5	10		50	2	4
	50	2	4		50	7	14
1884–85	50	12	24		50	5	10
	50	5	10	1890–91	50	8	16
	50	3	6		50	3	6
	50	9	18		50	8	16
1885–86	50	3	6		50	7	14
	50	9	18		50	4	8
	50	7	14		50	4	8
	50	6	12		50	5	10
	50	4	8		50	4	8
1886–87	50	7	14	1891–92	50	4	8
	50	7	14	1892	50	10	20
	50	8	16		50	8	16
	50	7	14	1892–93	50	7	14
	50	9	18		50	10	20
1887–88	50	9	18		50	4	8
	50	7	14		50	5	10
	50	6	12		26	5	19
	50	8	16				
	50	8	16		3,176	412	

Lowest mortality	2%
Highest "	24
Difference	22

Table II shows the relative frequency of the various mortality rates from two to 24 per cent.

TABLE II.

Number of groups with mortality of		2%,	1
"	"	4%,	2
"	"	6%,	6
"	"	8%,	8
"	"	10%,	7
"	"	12%,	3
"	"	14%,	12
"	"	16%,	10
"	"	18%,	8
"	"	20%,	4
"	"	22%,	1
"	"	24%,	1
			63
Number of groups with mortality of 19%+ (26 cases)			1

As it might be thought that possibly these large variations might be due to a difference in the virulence of the disease in particular years, the highest and lowest mortality in each year is shown in Table III, the per cent. being as before for groups of fifty. It will be seen by this table that in no year was there a group which did not have a mortality of at least 16 per cent, and with the exception of three years there occurred yearly groups with as low a mortality as two, four, six, and eight per cent.

TABLE III.

Highest and Lowest Mortality in Groups of Fifty, by Years.

	Highest.	Lowest.
1882	22%	14%
1882–83	18	14
1883–84	20	4
1884–85	24	6
1885–86	18	6
1886–87	18	14
1887–88	18	2
1888–89	16	6
1889–90	16	4
1890–91	16	6
1891–92	20	8
1892–93	20	8
1893–94	..	..

In the same year (1884–1885) in which occurred the highest mortality, 24 per cent., there is found a series with only six per cent. In every year, with the exception of three (1882, 1882–83 and 1886–87), the variations are quite large. On the other hand, in these three exceptional years, although the highest mortality is not greater than that of other years, the average is much higher, owing to the fact that no group has a lower mortality than 14 per cent, and consequently the variations are comparatively small. The average high mortality of these years, affects the larger groups as will be seen by the following tables. But as most of the years with high mortalities show also low mortalities, the *greatest* variations in Tables I and II cannot be attributed to differences of virulence in different years.

TABLE IV.

By Hundreds.

	Cases	Dths.	%		Cases	Dths.	%
1882	100	17	17	1888–89	100	17	17
	100	18	18		100	14	14
1882–83	100	18	18		100	7	7
	100	15	15		100	11	11
1883–84	100	19	19	1889–90	100	13	13
	100	6	6		100	7	7
	100	7	7		100	12	12
1884–85	100	17	17	1890–91	100	11	11
	100	12	12		100	15	15
1885–86	100	12	12		100	8	8
	100	18	13		100	9	9
1886–87	100	11	11	1891–92	100	14	14
	100	15	15		100	15	15
	100	16	16	1892–93	100	14	14
1887–88	100	16	16		76	10	10
	100	14	14				
	100	9	9		3,176	412	

Highest mortality	19%
Lowest "	6
Difference	13

TABLE V.[1]

By Two-Hundreds.

	Cases	Dths.	%		Cases	Dths.	%
1882	200	35	17.5	1888–89	200	26	13.0
1882–83	200	33	16.5		200	21	10.5
1883–84	200	25	12.5	1889–90	200	24	12.0
1884–85	200	24	12.0		200	19	9.5
1885–86	200	24	12.0	1890–91	200	26	13.0
1886–87	200	24	12.0		200	17	8.5
	200	31	15.5	1891–92	200	29	14.5
1887–88	200	30	15.0	1892–92	176	24	13.6

Highest mortality	17.5%
Lowest "	8.5
Difference	9.0

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[1] The division by years in this and the subsequent tables is only approximately exact.

TABLE VI.

By Three-Hundreds.

	Cases	Dths.	%		Cases	Dths.	%
1882-83	300	53	17.6	1887-88	300	40	13.3
1883-84	300	40	13.3	1888-89	300	32	10.6
1884-85	300	36	12.0	1889-90	300	32	10.6
1885-86	300	36	12.0	1890-91	300	34	11.3
1886-87	300	47	16.6	1891-92	300	38	12.6

Highest mortality	17.0%
Lowest "	10.6
Difference	7.0

TABLE VII.

By Four-Hundreds.

	Cases	Dths.	%		Cases	Dths.	%
1882-83	400	68	17.0	1888-89	400	47	11.7
1883-85	400	49	12.2	1889-90	400	43	10.7
1885-86	400	48	12.0	1890-91	400	43	10.7
1887-88	400	61	15.2	1891-93	376	53	14.0

Highest mortality	17.0%
Lowest "	10.7
Difference	6.3

TABLE VIII.

By Five-Hundreds.

	Cases	Dths.	%		Cases	Dths.	%
1882-84	500	87	17.4	1891-93	500	61	12.2
1884-86	500	54	10.8	1893	176	24	13.6
1886-88	500	71	14.2				
1888-89	500	61	12.2		3,176	412	12.66
1889-91	500	54	10.8				

Highest mortality	17.4%
Lowest "	10.8
Difference	6.6

TABLE IX.

By Six-Hundreds.

	Cases	Dths.	%
Group 1	600	93	15.5
Group 2	600	72	12.0
Group 3	600	145	14.5
Group 4	600	64	10.6
Group 5	600	72	12.0
Group 6	146	24	16.5
Highest mortality			15.6
Lowest "			10.6
Difference			4.9

TABLE X.

By Seven-Hundreds.

	Cases	Dths.	%
Group 1	700	100	14.2
Group 2	700	96	13.7
Group 3	700	88	12.5
Group 4	700	75	10.7
Group 5	376	53	10.4
Highest mortality			14.2
Lowest "			10.7
Difference			3.5

TABLE XI.

By Eight-Hundreds.

	Cases	Dths.	%
Group 1	800	117	14.6
Group 2	800	109	13.6
Group 3	900	90	11.2
Group 4	776	96	12.0
Highest mortality			14.6
Lowest "			11.2
Difference			3.4

TABLE XII.

By Nine-Hundreds.

	Cases	Dths.	%
Group 1	900	129	14.3
Group 2	900	123	13.6
Group 3	900	98	10.8
Highest mortality			14.3
Lowest "			10.8
Difference			3.5

TABLE XIII.

By Thousands.

	Cases	Dths.	%
Group 1	1,000	141	14.1
Group 2	1,000	132	13.2
Group 3	1,000	115	11.5
Highest mortality			14.1
Lowest "			11.5
Difference			2.6

TABLE XIV.

By Fifteen-Hundreds.

	Cases	Dths.	%
Group 1	1,500	212	14.1
Group 2	1,500	176	11.7
Difference			2.4

Arranging the highest and lowest mortality in each of these groups in one table we have the following (Table XV). By this it will be seen that not till 1,000 cases are recorded are the variations between the different groups reduced below three per cent.

TABLE XV.

Groups of	Highest Mortality	Lowest Mortality	Difference	Difference, omitting first 400 Cases
Fifty	24.0	2.0	22.0	22.0
One-Hundred	19.0	6.0	13.0	13.0
Two-Hundred	17.5	8.5	9.0	7.5
Three-Hundred	17.6	10.6	7.0	5.3
Four-Hundred	17.0	10.7	6.3	4.5
Five-Hundred	17.4	10.8	6.6	4.0
Six-Hundred	15.5	10.6	4.9	3.8
Seven-Hundred	14.2	10.7	3.5	3.3
Eight-Hundred	14.6	11.2	3.4	2.7
Nine-Hundred	14.3	10.8	3.5	1.3
One-Thousand	14.1	11.5	2.6	.8
Fifteen-Hundred	14.1	11.7	2.4	

It was said at the beginning that the continuous high mortality through 1882 and 1883 made the variations in all the groups containing more than one hundred cases larger than would be the case if these exceptional years[2] were omitted. If the first 400 cases of these years be excluded, it will be seen by the fourth column of Table XV that the differences between the highest and lowest mortalities is less in all the groups containing two hundred or more cases. The smaller groups are not affected for reasons that will be obvious on studying the tables.

In groups of one thousand cases the variations are reduced to eight-tenths of one per cent., while in groups of eight hundred cases they are less than three per cent.

It would thus appear that, assuming the conditions to remain the same (as was done in these tables), *it requires from* 800 *to* 1,000 *cases to eliminate the effect of chance upon statistics giving the mortality of typhoid fever.* Likewise it would seem that if the results of one kind of treatment are to be compared with those of another, an equal number of cases is required to obtain a standard mortality for each. The error due to assuming the conditions to have been the same in the above tables must be appreciable, if not large but it is partially if not wholly allowed for in the persisting variation in the largest groups of cases. It stands to reason that the less the variations in the conditions the less the variations in the results. On the other hand, the conditions will always vary more or less. The only condition we have control over is treatment. It is doubtful if this has practically varied in the above series — that is, so as to affect the results. It should be said that the average mortality of 12.6 per cent. does not correctly give the result of treatment in the Boston City Hospital, as the cases dying within a few days after admission have not been excluded.

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[2] In 1886-87 was also continuously high.

May it not well be that similar variations from chance alone may occur in statistics of mortality or statistics of the effect of special modes of treatment, of other diseases, such as diphtheria, pneumonia, chorea, epilepsy, etc.? At any rate until the contrary has been shown to be the case, it would seem that it is not safe to accept such statistics as evidence of the efficacy of treatment unless based upon the results in a very large number of cases. That so large a number as 800 to 1,000 is required in typhoid fever at least, is, I think, generally overlooked.

CARDIAC STIMULANTS.[1]

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The condition of the heart is constantly watched by the medical man. From time immemorial all physicians have sought in the pulse as exemplifying the heart of their patients, important aid with regard to diagnosis and weighty suggestions as to treatment. To-day no practitioner is too wise and none too simple to regard it. Neither the gravest consultation nor the most hurried and perfunctory visit is ended before skilful fingers, watched with a mixture of awe and approval by the family, have dwelt upon the radial artery. In all diseases at all stages the behavior of the heart is considered both as an index of the bodily state and a guide for the management of the case.

Unfortunately, this singular unanimity of the profession scarcely extends to the interpretation of the silent message which the heart vouchsafes, and still less to the mode of treatment appropriate to the occasion.

It is the object of the present paper to lay down some general rules as to the choice of cardiac remedies.

As has already been intimated, such a subject touches upon or overlaps all therapeutic measures in all conditions, so that our present consideration will unavoidably be very limited in its scope and incomplete in its details. Yet it is hoped that some practical benefit may be obtained.

In a general way, the disorders of the heart may be divided into those in which it shares in a general weakness of the system and those in which the original trouble is circulatory, using the word in its broadest sense.

The term general weakness is meant to include nervous debility. It is an interesting fact that the great majority of patients who come voluntarily to a physician because they believe the heart to be diseased are happily mistaken, and are really either dyspeptics, hypochondriacs, sufferers from intercostal neuralgia or addicted to some excess which has occasioned palpitation. The hypochondriacs are many of them medical students, some of whom come in anxiety each year to their instructors for examination. I can recall only one of all such whom I have happened to auscult who actually had an organic lesion. The cases of intercostal neuralgia are apt to be anemic and to have tender spots along the course of an intercostal nerve and the heart is found to be normal. The victims of excess (in tea, coffee, tobacco or venery) are numerous. Their general appearance betrays them; and their heart-sounds have a hurried, quick, sharp, and as it were impatient character at the apex, unassociated with enlargement or persistent murmur. There is little muscular element in the first sound. There may or may not be a slight basic systolic murmur, or at the apex a systolic whiff, once or twice during each respiratory cycle. The nervousness of the apex sounds is quite recognizable. The auscultatory signs are valuable in these functional cases, because the patient may not voluntarily confess his wrong-doing, and yet it is useless for him to swallow drugs without reforming his habits. It is better that for a time the special indulgence should be wholly stopped both because total abstinence is more likely to be attained than is temperance and because even a small amount of tobacco, for instance, will keep the already nicotized heart in its diseased state.

Alcoholic excess often affects the heart in the way just described, but the other bodily effects are usually too evident for one to need to auscult the heart in order to recognize the nature of the case, and besides arterial and myocardial degeneration may be present, so that the prognosis and treatment are not those of functional disturbance.

In the purely functional cases, bromide and a tonic usually bring immediate subjective improvement, and make it easier for the patient to abstain from the exciting cause. If there be anemia, iron is useful. Otherwise I am apt to prescribe compound tincture of cinchona. Nux vomica and strychnine are usually regarded as physiologically incompatible with the bromides, but in this class of cases ten or fifteen grains of bromide of sodium and five or ten minims of tincture of nux vomica seem to me an efficient combination. An analogous experience is the favorable effect upon some cases of enuresis when the belladona which has been used in vain is combined with nux vomica and the enuresis ceases. Clinical facts are sometimes like Wilkie Collins's heroine, "superior to logic."

Tincture of strophanthus in a dose rarely exceeding five minims, three times a day, has a good effect upon nervous palpitation.

Cases of general and nervous debility sometimes have excessive cardiac weakness out of proportion to the other symptoms. The heart impresses one as thin and flabby. It may be somewhat dilated and there may be inconstant murmurs. The condition is not devoid of danger. There may be sudden collapse, with pulmonary congestion and death. At the same time the mind has considerable influence upon the disturbance, so that assurances that there is no valvular disease and that with returning bodily vigor the heart will become strong, contribute to the cure. About two years ago, a gentleman who had returned from a scientific expedition to Mexico with neurasthenia, and whose condition was causing his family much anxiety, allowed me to show him to a class of medical students as an unusually fine illustration of multiple inorganic murmurs. He recovered rather rapidly after a sea-voyage and is now well and actively engaged in his profession of civil engineer. For this neurasthenic state there is no specific remedy. Economy of nervous energy, and a cautious tonic regimen, with massage, graduated exercise, naps, lunches, and such drugs as cod-liver oil, iron, arsenic and strychnine avail more than the ordinary cardiac tonics.

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[1] Read, by invitation, at a meeting of the Plymouth District Medical Society, in Plymouth, July 17, 1895.

The specific fevers afford the greatest opportunity for careful observation, nice discrimination and good judgment in relation to the heart, of any bodily disorders other than circulatory. Some render the matter attractively simple by saying that fever contraindicates the use of digitalis. Others never allow any patient to get very near death before he swallows a certain amount of this panacea. Some of us believe the better way lies between these two extremes, but we are not above confessing that individual cases puzzle us.

It may be well to dwell somewhat upon the properties of digitalis itself, to learn what are the capabilities of the tool we desire to use. Here we find pretty general agreement that digitalis is a nervous stimulant, acting both on the heart itself and on the vagus nerve, and not directly supplying any energy but merely developing and regulating that which the heart already possesses. It is therefore plain that the drug if it leads to the display of more cardiac vigor, inasmuch as it does not contribute to the general store, hastens the time when all energy will be exhausted and death ensue. We have an illustration of this fact in the result of the stimulation of the sympathetic nerve, which makes the heart beat stronger and more rapidly but also leads to earlier exhaustion than otherwise occurs, while a stimulation of the inhibitory fibres of the vagus in such a way as to slow and weaken the heart, actually enables that organ to store up energy.

Digitalis does more good when the heart is rapid, feeble, dilated, irregular in rhythm and especially when it is irregular in force. If such conditions develop in the course of any disease, we may expect the drug to bring some improvement. What little force there is will be more efficiently employed and a crisis may thus be tided over, and complete recovery ensue. In long continued fevers therefore, the longer such imperative indications for its employment are deferred and the shorter time the drug is given the more good it is likely to do. To prescribe it early in a long illness and where perhaps the only abnormalities in the heart are moderate weakness and a rapidity not disproportionately high as compared with the bodily temperature, will in most cases lead to nausea, malnutrition and early exhaustion rather than to any good. In this connection, might be called to mind the well-known difference in the average pulse-rate of pneumonia and of typhoid fever. In uncomplicated typhoid the heart-beats are lower relatively to the fever than in most diseases, so that if the pulse remains permanently at 120 it is of evil omen, while a rate of 140 in pneumonia is perfectly compatible with a favorable prognosis.

The books mention that digitalis does especial good in the exacerbations of chronic bronchitis, beyond what it usually accomplishes in general diseases. It has seemed to me that the explanation of this lies in the strain that long-continued bronchitis and consequent emphysema exert upon the right ventricle, so that many such patients are heart-cripples, and receive the benefit from digitalis that dilated and enfeebled hearts usually get.

The habitual use of digitalis and other nervine cardiac stimulants in febrile diseases should in my opinion be deprecated. Many favorable cases can be guided to a successful issue without a single dose of the sort. The longer the exhibition of such drugs can be delayed, the less harm and the more good are they likely to do; yet, it is not impossible, although in my own limited experience it is rare, for them to save life, for example in the enfeebled state sometimes seen at the crisis of pneumonia, the subcutaneous injection of fifteen or twenty-five minims of tincture of digitalis may be of decided advantage.

In general systemic diseases, nux vomica or strychnine, alcohol and coffee commend themselves as more often useful and less often harmful than is digitalis. A temporary stimulation in collapse may be got from a hypodermic of atropine, one-sixtieth of a grain, or of cocaine, one-half a grain.

In the acute diseases of the heart cardiac sedatives, such as aconite, are sometimes preferable to stimulants. Every effort should be made to lessen the demands upon the affected but indispensable organ, by enforcing physical and mental rest, and by giving only easily digested nourishment in moderate amounts. If the circulation is being passably maintained, we should let well enough alone. The additional strain consequent upon the stimulation of digitalis and the like may magnify the inevitable damage done to the valves, aggravate the inflammation of the roughened pericardium, or exhaust the already impaired vitality of the muscular walls.

In chronic valvular disease, our first duty is to see that the demands made upon the enfeebled heart are not too great, or at least no greater than is absolutely necessary. If we can lessen the expenses of the economy so that they shall not exceed its diminished income, the heart may long continue to do a satisfactory business at the old stand. If, while it is thus carrying on the circulation, some one gives digitalis, not because it is needed but because there is a murmur, the heart may be prematurely exhausted. If, however, compensation has been ruptured, then digitalis may be of great benefit, tending to contract the dilated ventricles, and to strengthen and regulate the heart-beats.

All agree that mitral disease in its later stages is helped by digitalis; but, in regard to aortic regurgitation, many have an apprehension that digitalis may not be free from harm, because, the diastole being lengthened, more chance will exist for blood to regurgitate into an already overburdened left ventricle. In reply to this objection, we may say that digitalis tends to contract the left ventricle if dilated and also to invigorate it, and to render its contractions more efficient — advantages which more than counterbalance the lengthening of the diastole. One explanation why results are more unsatisfactory in cases of aortic regurgitation is that when once the heart begins to fail in this disease, life is near its termination and no drug, not even digitalis, can long defer death; whereas in mitral disease existence for years after the first symptoms of ruptured compensation is the rule rather than the exception.

An unfortunate characteristic of digitalis is that it contracts the arterioles and raises the intra-arterial tension, so that it is worse than folly to give it where the pulse is already of high tension and the aortic second sound loud and booming.

When there are symptoms of cardiac failure, when the apex cannot be located, the heart-sounds are feeble though without a murmur, and the radial artery is calcified, we know that the degenerated myocardium will not long respond to any stimulus. The rational line of treatment lies in the direction of lessening the heart's burdens, both by general measures and by the specific employment of nitro-glycerine to diminish arterial resistance; and we may also prescribe potassic iodide in the hope that its absorbent powers may open up once more the calcified coronary arteries, and permit the better nourishment of the heart-muscle. Iron and arsenic may also contribute to nutrition. Strychnine and strophanthus often prove to be good stimulants. Alcohol is nothing but a palliative, and in this or any chronic cardiac disease is open to the grave suspicion of promoting degenerative processes. Against the exhibition of digitalis is its unfortunate property, just mentioned, of raising the intra-arterial tension. Given in combination with nitro-glycerine, we may hope to get the beneficial effects of both drugs. Abstract considerations aside, we do meet with cases of chronic myocarditis where nothing else gives the comfort which digitalis affords. It seems to search out and utilize every mite of energy the expiring organ still possesses. The subcutaneous employment of morphine is also sometimes valuable in the terminal stages of this and other forms of heart disease, not only giving relief but reprieving the patient from impending death.

Sparteine, adonidin, cactus grandiflora and convallaria majalis may in certain cases be useful. They rank far below the remedies already mentioned. With regard to the choice of a preparation of digitalis, I believe that the tincture is as efficient as the infusion, and that the apparent superiority of the infusion may very likely lie in the fact (pointed out recently by H. C. Wood) that much stronger doses of the latter are given than of the former. In the present U. S. Pharmacopeia the infusion is made one-tenth the strength of the tincture, while its dose is said in the National Dispensatory to be not ten but twenty-six times larger. If we determine to try the drug in a given case, we should be prepared gradually to push the dose, if necessary, till either benefit or toxic symptoms are produced.

Medical Progress.

REPORT ON PATHOLOGY.

BY JAMES H. WRIGHT, M.D.,
Assistant in Pathology, Harvard Medical School.

THE ETIOLOGY OF THE SUPPURATIVE COMPLICATIONS OF TYPHOID FEVER.

THE question as to whether the typhoid bacillus is the causative agent in the production of the suppurative complications and sequelæ of typhoid fever has given rise to much discussion. Many observers hold to the view that the typhoid bacillus does cause these conditions, or in other words, can produce pus, for in certain cases it is the only organism found in the lesions. On the other hand, many bacteriologists consider, with Baumgarten, that these suppurations are merely the result of infection with the ordinary pyogenic cocci, as has been demonstrated by a number of investigators, and that in those cases in which the typhoid bacillus has been found, it was present only secondarily, while the true cause of the process, the pus-producing cocci, had accomplished their work and had died out.

To this question there have recently appeared two interesting contributions. One of these is a case of multiple abscess formation in the kidneys in typhoid fever, reported by Flexner,[1] in which the most careful examination of the pus by all known methods failed to reveal the presence of any other organism than the typhoid bacillus. The other, by Dmochowski and Janowski,[2] is a very exhaustive *résumé* of the literature of the subject, with an extensive experimental study of the results of inoculation with cultures of the typhoid bacillus.

These investigators have shown, by injecting the typhoid bacillus into the tissues of animals in a great variety of ways, that under certain conditions it is capable of producing suppuration, especially if the resistance of the tissue be diminished, as for instance by subjecting the tissues to the action of a weak emulsion of croton oil.

From a consideration of their work and the work of other observers who have studied this question, it would seem that while the typhoid bacillus may cause the suppurations of typhoid fever in a certain proportion of cases, yet in the majority of cases such processes are simply the result of secondary infection with either the staphylococcus pyogenes aureus or the streptococcus.

RIBBERT'S THEORY OF THE ORIGIN OF CARCINOMA.

In a recent number of *Virchow's Archiv*, Ribbert[3] contributes some further observations in support of his theory that the origin of carcinoma is due to a primary new growth of connective tissue, which encroaches upon the epithelium of a part and separates portions of it from their normal relations, so that a growth of masses of epithelial cells arises, under abnormal conditions. In the present paper he devotes particular attention to carcinomata of the alimentary canal, claiming to find in them the same evidences of a primary activity of connective-tissue elements of the mucosa as in the epidermoid cancers.

While this theory of Ribbert is plausible and interesting, it cannot be said that the evidence he has adduced in its favor is convincing.

EXPERIMENTAL NEPHRITIS FROM SODIUM CHLORIDE.

Levi[4] administered to dogs and rabbits by the stomach and hypodermatically daily doses of one to four grammes per kilo of sodium chloride, and examined the kidneys microscopically after varying periods.

After 5 to 15 days there was found "granular necrosis" of the epithelium of the secreting tubules, while in the conducting tubules hyaline and granular casts, rich in nuclear fragments, were seen. The glomeruli also showed swelling and desquamation of their epithelium.

After 22 to 70 days, in dogs, more extensive lesions were present, consisting for the most part of marked "granular necrosis" with almost complete transformation of the secreting tubules, in places, into masses of necrotic detritus. Fatty and hyaline degenerations, together with granular and hyaline casts, were also observed.

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[1] Flexner: Journal of Pathology and Bacteriology, April, 1895.

[2] Dmochowski and Janowski: Beiträge zur pathologischen Anatomie, E. Ziegler, Bd. xvii, Ht. 2.

[3] Ribbert: Virchow's Archiv, Bd. cxli, Ht. 1.

[4] Levi: Centralblatt für allgemeine Pathologie und pathologische Anatomie, Bd. vi, Nos. 12, 13.

In the glomeruli there was fatty degeneration and disappearance of the nuclei of the epithelium, together with more or less fibroid change and capsular thickening. Changes in the interstitial tissue of the kidneys were also observed. These consisted in a proliferation of the connective-tissue nuclei and the appearance of fibroblasts with protoplasmic processes, while numerous aggregations of small round cells of the appearance of lymphoid cells were to be seen, especially in the neighborhood of small veins and glomeruli.

BACTERIA AND THE DIGESTIVE FUNCTIONS.

The presence of bacteria in the intestine has been stated by Pasteur to be necessary for the life of animals, and this view has been widely accepted, it being generally believed that these organisms play a very important rôle in supplementing the action of the digestive juices upon the ingesta.

At a recent meeting of the Physiological Society of Berlin, Nuttall and Thièrfelder[5] reported the result of an experiment which would seem to disprove this idea. A young guinea-pig, obtained by Cæsarean section at term under aseptic precautions, was kept alive and thriving during eight days in a sterile chamber, in which it was fed upon sterilized milk and breathed sterile air. At the expiration of this period, the animal, which was well nourished and healthy, was killed and a careful bacteriological examination of its intestine was made. This examination showed that the contents of its alimentary canal were free from bacteria, thus proving conclusively that an animal can live and thrive without the aid of bacteria in carrying on its digestive functions.

The many difficulties in the way of the successful execution of this experiment were overcome in a most ingenious manner, through the peculiarities of construction of the sterile chamber.

RHABDOMYOMA OF THE SCIATIC NERVE.

At the autopsy of an adult woman with congenital dislocation of the right hip and atrophy of the right leg, Orlandi,[6] found two fusiform enlargements, about 14 and 16 cm. in circumference in the course of the sciatic nerve; one situated at its junction with the sacral plexus, the other near the popliteal space.

There was no history of pain along the course of the nerve, and the existence of the tumors was not suspected during life.

Microscopic examination showed that the tumors were rhabdomyomata, since they consisted essentially of striated muscle fibres, sometimes very atypical in character, intermixed with fibres of connective tissue together with normal and degenerated nerve fibres. Orlandi regards these growths as originating in an embryotic displacement of certain of the muscular elements, destined for the leg, in accordance with the theory of Cohnheim. In support of this view he calls attention to the close relation in development between the nerve trunks of the leg and the muscles. These tumors, therefore, are very closely allied to the teratomata.

This case is apparently the only one recorded in literature in which a rhabdomyoma developing in a human nerve has been observed. Pure rhabdomyomata are rather rare, occurring most commonly in the myocardium, while in the mixed tumors of the genito-urinary system striated muscle fibres are not infrequently present.

THE PATHOLOGICAL HISTOLOGY OF RABIES.

Germano and Capobianco[7] have studied the spinal cords of dogs and rabbits dead of rabies. The gross lesions consist of hyperemia of the meninges, and more or less congestion and points of hemorrhage in the substance of the cord in areas having no definite distribution. On microscopic examination of these areas there are observed marked infiltration with leucocytes along the perivascular spaces and around nerve cells, while the endothelium of the vessels proliferates. The nerve cells undergo atrophy and vacuolation, leaving open spaces in the gray matter. The nerve fibres show varicosity and vacuolation of the axis cylinder, with degeneration of the myelin sheath. The neuroglia increases in amount with augmentation in the number of its nuclei and thickening of its fibres. The process, as a whole, consists in an acute inflammation of the cord tending to the destruction of the nervous elements and resulting in a hyperplasia of the neuroglia to replace them. This hyperplasia of the neuroglia, in turn, also seems to cause the destruction of nerve cells and fibres by compression.

THE LESIONS OF EXPERIMENTAL DIPHTHERITIC PARALYSIS.

Investigators are by no means in agreement with regard to the pathology of diphtheritic paralysis. Some have observed a peripheral neuritis, others lesions in the spinal cord, while still others have failed to find any lesion either in the central or peripheral nervous system.

Crocq[8] has induced paralysis in rabbits with cultures of the bacillus diphtheriæ, and also with the toxine of diphtheria, and has studied the nervous system histologically. His results show that in the experimental diphtheritic paralysis of rabbits there occur lesions both of the spinal cord and of the peripheral nerves, the medulla and cranial nerves not being affected, however.

In the cord these lesions consist, at first, in enlargement and loss of staining power of the nerve cells, with disappearance of their processes; then proliferation of the neuroglia cells with atrophy and disappearance of nerve cells and then replacement by sclerotic tissue. The white substance is only exceptionally changed.

In the nerves, there is observed segmentation of the myelin, multiplication of nuclei and fragmentation of the axis cylinders. Later, the myelin becomes reduced into globules, the axis cylinder disappears, while nuclei become more and more numerous. Finally, the myelin is absorbed. This degeneration is most marked in the anterior roots, while the posterior roots are not affected.

Crocq believes that in the rabbit the diphtheritic paralysis is essentially a primary myelitis with secondary peripheral neuritis. In man, however, he considers that the diphtheria poison only rarely produces such central lesions with secondary lesions in the nerves, but that the most usual form of paralysis in human diphtheria is due to primary peripheral neuritis.

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[5] Nuttall and Thièrfelder: Verhandl. d. Physiolog. Gesellsch. zu Berlin, June 14, 1895.

[6] Orlandi: Archivio per le Scienze Mediche, vol. xix, Fas. 20.

[7] Germano and Capobianco: Annals de l'Inst. Pasteur, ix, No. 8.

[8] Crocq: Archives de Méd. Exper. et d'Anat. Path., July 1, 1895.

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Reports of Societies.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Ninth Annual Meeting, Niagara Falls, May 28 and 29, 1895.

FIRST DAY. — TUESDAY.

The President, **Dr. L. Bolton Bangs**, read a paper on

TUBERCULOSIS AND NEOPLASMS OF THE BLADDER: SURGERY OR HYGIENE?

The author first reported three cases of tuberculosis of the bladder, which he stated were typical of many, and in which hygienic treatment was followed by very beneficial results. Vitalization of tissue is what these patients need, and they require at least two years of good hygienic residence in a temperate climate; besides climate, they need occupation, for *ennui* seems to be almost as deteriorating as confinement to the house. Surgical traumatism produced by over-zealous efforts to relieve local symptoms seems to result in more harm than good. Such efforts are apt to put the unhappy patient still further below par, and facilitate the development of other tubercular foci either in the same organ or in one more distant. It is not necessary, the speaker said, to enter into the question whether the infection is an "ascending" or a "descending" one: the bacilli are in the individual's blood, and they only await a local congestion (following some form of irritation) in order to lodge and proliferate.

After faithful and zealous efforts to relieve by surgical interference the local symptoms of these cases, he has been forced to the conclusion that the less instrumentation we resort to the better. In the genito-urinary tract, as elsewhere, the best defence of the tissues against the inroads of the bacilli, and that which finally effects a cure, is to be attained only by enabling the body to surround the tubercular deposits with a layer of healthy connective tissue. He expressed the opinion that this can be done in no other way than by improving the quality and resisting power of the individual.

Dr. Bangs next referred to a class of cases, in strong contrast to the foregoing, but in which the possibility of a cure also depends upon their early discovery, namely, malignant disease of the bladder. Unfortunately, in these cases, many of the early symptoms are overlooked, or, if appreciated, are misunderstood. The patients themselves, because of the insidious onset of the disease, become accustomed to their first symptoms and usually do not seek the advice of their medical attendant until the affection is well advanced. The speaker then reported three cases of malignant disease of the bladder, and stated that he contrasted these two groups in order to present for discussion the points (1) that incipient cases of tuberculosis of the bladder should be subjected to hygienic rather than surgical treatment, and (2) that in the incipient stages of vesical neoplasms, early surgical treatment of the most radical kind should be instituted.

Dr. John P. Bryson, of St. Louis, said, he is entirely in accord with the statements made by Dr. Bangs regarding the treatment of these tubercular cases. In tubercular cystitis, perineal drainage is not to be recommended. In two of his cases the perineal wound became infected, and never healed. The suprapubic route is altogether to be preferred when drainage is to be resorted to at all in these cases. An early diagnosis is of the utmost importance, and is possible, perhaps, earlier than was intimated in the paper. Careful examination of the prostatic urethra by means of the finger in the rectum and repeated searches for the bacilli in the urinary sediments will help us. When a suprapubic incision is deemed necessary, experience has led him to make the opening as high up and as far away from the vesical outlet as possible, so as to have a direct drainage channel and keep the tube away from the vesical outlet, which is the most sensitive part of the bladder.

In cases of vesical neoplasms, frequently the symptoms come on late. If the new growth is situated towards the fundus, or at any considerable distance away from the vesical outlet, there is no reason in the world why we should get any symptoms of its existence for a considerable length of time, and the first symptom is apt to be hemorrhage. The speaker said he is not so optimistic as the reader of the paper regarding the benefit to be derived from early operation in cases of neoplasms of the bladder. He has never yet seen a case of papilloma of the bladder, supposed to be benign, which did not prove to be malignant and destroy the life of the patient.

Dr. Gardner W. Allen, of Boston, reported a case of tuberculosis of the bladder, with very pronounced symptoms, which was cured by hygienic treatment.

Dr. Bransford Lewis, of St. Louis, reported a case of tubercular cystitis in a farmer from Kansas. The patient came to St. Louis, and there, under supporting treatment, rest, and creasote and cod-liver oil internally, the urine, which had been cloudy for three years, cleared up, and the man gained about twenty pounds in weight in three months.

Dr. Bryson said that in these cases he has derived much benefit from the use of the simple hypophosphites. Cod-liver oil has not been particularly serviceable. He has seen no benefit from the malt preparations, and creasote has not in any way helped his patients. In the early stages of the disease, he has seen the frequency of urination relieved by the internal administration of the oil of yellow sandalwood.

Dr. Eugene Fuller, of New York, said he agreed with Dr. Bangs that hygiene is the most important factor in the treatment of these cases. Alcohol, in some form, is often of service.

Dr. George Chismore, of San Francisco, expressed the opinion that the pain complained of by these patients is very frequently due to the methods of search employed in endeavoring to discover the cause of the trouble. As a routine treatment, washing of the bladder is not to be recommended, particularly in tubercular cases. He agreed with Dr. Bryson that early operation in cases of malignant growths of the bladder does not always effect a permanent cure.

Dr. Bangs, in closing the discussion, said that while he is willing to admit that the cure of malignant disease of the bladder is still a problem, the success he has obtained in operating upon cases of so-called papilloma of the bladder warrants him in expressing the belief that such cases are curable by early operative interference.

HEMATURIA.

Dr. William K. Otis, of New York, read a paper on this subject. After detailing a number of chemical tests to demonstrate the presence of blood in the urine, the author stated that the actual presence of blood may also be determined by the use of the spectroscope; microscopes having a spectroscopic eye-piece are especially adapted for this purpose. When the existence of hematuria has been definitely determined, the next important step is to ascertain, as accurately as possible, in what portion of the urinary tract the lesion from which the hemorrhage emanates is situated. When it is located in the anterior urethra, between the meatus and the compressor urethræ muscle, if the blood is sufficient in amount it will exude from the meatus, or may be pressed out by stripping the urethra with the finger. If the urine is passed in two portions, the first only will contain blood. When the hemorrhage is situated in the posterior urethra, between the compressor urethræ muscle and the internal sphincter of the bladder, blood will not exude from the meatus, and if it is sufficiently large in amount, the pressure will overcome the lesser resistance of the internal sphincter, and the blood will flow back into the bladder, making it difficult to decide whether its source is from the bladder or from the posterior urethra. In most of the cases where the bleeding comes from the posterior urethra there is considerable urgency in urination, although occasionally this symptom is absent.

If the point of hemorrhage is situated within the bladder, the entire urine therein contained will be intimately mixed with blood; and if the hemorrhage is profuse, clots may form which have a certain diagnostic significance if they are too large to have passed through the ureters. Some authors consider the color of the urine an indication of the origin of the hemorrhage; but this varies so greatly under different conditions that it is unreliable, and is of but little value in arriving at a diagnosis. Microscopic examinations of the urine may show evidence of the presence of some new growth in the bladder; on the other hand, the detection of casts containing blood-corpuscles indicates that the lesion exists in the kidney.

Should the examination of the urine fail to locate the source of the hemorrhage, we may proceed to the direct examination of the bladder itself by carefully washing out the organ through a woven catheter by means of a hand syringe, and then inject a few ounces of clear fluid and withdraw the catheter just far enough to prevent the fluid from escaping; after a few moments the catheter is re-introduced, and if the fluid returns mixed with blood, the hemorrhage is probably vesical in origin.

The resorption test, made by introducing a solution of potassium iodide into the bladder and shortly afterwards testing the saliva for free iodine is also extremely valuable and satisfactory for the purpose of determining if a lesion exists within the bladder. When the bladder is the seat of a new growth, its presence may sometimes be determined by bimanual palpation with one finger in the rectum, or by examination with an ordinary searcher or sound.

The value of an examination with the electro-cystoscope in cases of hematuria in which the diagnosis is difficult can scarcely be overestimated. By its aid we are enabled not only to locate with exactness the portion of the bladder from which the hemorrhage emanates, but also to determine the cause and extent of the lesion. The instrument is especially valuable in making a correct diagnosis in renal hemorrhage, for by its aid we are able to ascertain not only that the blood is derived from the kidney, but also to tell definitely on which side the affected organ is situated.

In locating hemorrhage from the kidney, the clinical symptoms, physical signs and previous history of the patient are usually of great value, although hemorrhages occasionally occur without the slightest warning, and without other symptoms. As a rule, however, symptoms are present which point to the kidney as the seat of the difficulty. Lastly, if for any reason it is impossible to locate the lesion, and at the same time the bladder appears to be its most probable seat, it is perfectly allowable to perform an exploratory suprapubic section, especially if the hemorrhage is severe or has been of long duration.

Dr. W. F. Glenn, of Nashville, said that by means of the Leiter cystoscope and the Otis urethroscope we can often make out with certainty whether the source of the bleeding is the urethra, bladder or kidney.

Dr. Bryson said that while he is inclined to agree with the statement made by Dr. Glenn, we still need an instrument which will enable us to get a good view of the vesical outlet. The speaker called attention to the possibility of determining the source of pyuria, when it is unilateral and of renal origin, by means of the cystoscope. He has catheterized the ureters in the female, and regards it as a very uncertain procedure, at least, in his hands. When properly and skilfully used, there is probably no instrument which affords the same amount of diagnostic advantage as the cystoscope. To use the instrument well requires long practice, and the photographs of cystoscopic views which are now accessible are among the very best aids we have in studying the vesical interior.

Dr. Edward R. Palmer, of Louisville, said he has had no trouble in getting a view of the bladder neck, for which purpose he employes a long Klotz tube (No. 24–26) and the Otis instrument lamp.

Dr. Abner Post, of Boston, referred to two cases of carcinoma of the kidney recently coming under his observation, in which some very interesting casts of the ureter were seen. In one case there were a large number of very short casts, while in the other there was one continuous cast over five feet in length.

Dr. R. W. Taylor asked Dr. Palmer whether he has not found that the introduction of such large instruments into the posterior urethra is apt to give rise to epididymitis?

Dr. Palmer replied that he has never seen any untoward results follow the introduction of the long Klotz tube.

Dr. Otis, in closing the discussion, said that while the cystoscope is of great value in detecting the source of hemorrhage from the genito-urinary tract, there are certain cases in which it cannot be used because of the free bleeding, or when the bladder is very small. He agreed with the statement made by Dr. Bryson that in cystoscopy we are not able to get a good view of the internal urethral orifice.

GONORRHEA IN THE FEMALE.

Dr. R. W. Taylor, of New York, read a paper on this subject. He stated that gonorrhea in the female is certainly much less frequent than it is in the male, and usually runs a much less definite course. In the main, it localizes itself in one or two parts, runs an acute course, becomes subacute and ceases. In many cases it begins and remains in a subacute condition for a considerable or a long time. Then again, in some cases, it progressively invades the genital tract.

Having become lodged in the cervix uteri, it may extend to the body of that organ, attack the tubes and ovaries and then the peritoneum. Patients thus affected are usually sterile, they suffer intense discomfort and pain, and their health is impaired until they may become mental and physical wrecks. These sad results certainly do occur in a relatively quite large number of cases. Instances are not infrequent in which wives are infected with gonorrhea by their husbands, who perhaps regard themselves as cured. It is very difficult and even impossible to get reliable statistics as to the frequency of the occurrence of acute gonorrhea in women. It, of course, exists largely in prostitutes, particularly in quite young ones, and those of the lower walks of life; and it is not uncommon in shop-girls and others who, for various reasons, leave their homes and cease to be under parental and family restraint. In the light of recent investigations and studies, it is clearly proven that in women over twenty years of age, the urethra and the cervix uteri are the parts most commonly attacked by gonorrhea. There can be no doubt of the existence of a true gonorrheal infection of the vulva, but it is not very common. It is sometimes met with in young girls between fifteen and twenty years of age, usually as a result of their first infection, and in their earlier attempts at intercourse. Although the existence of gonorrheal vaginitis has been denied, there can be no doubt that in a restricted number of cases, gonorrhea primarily attacking this tube does occur. It is also not infrequently infected by the gonorrheal secretion from the os uteri.

Gonorrhea in women, as in men, consists of an exudative inflammation of the submucous connective tissue, and the genital organs of women are so extensive, complex and involuted, and so profusely supplied by blood-vessels, which frequently undergo normal engorgement, that it can readily be understood why the morbid process may show a tendency to become chronic.

There has been a tendency developed within the past ten years to refer, in a loose and unscientific manner, all female ailments to gonorrhea, and attribute to many husbands who in earlier days had gonorrhea a gonorrheal infection of their wives, which produces serious consequences. The extreme and exaggerated views of Noeggerath, who claimed that eight hundred out of every one thousand men living in large cities suffered from gonorrhea, which they never recovered from, and who, on marrying, sooner or later infected their wives, have done much to perpetuate these ideas.

There is a tendency nowadays to harp upon the longevity of the gonocóccus, its Phœnix-like power of resuscitation, and its relentless virulence. This idea, put forth by some syphilographers, has had undue weight upon many gynecologists, who, under its influence, are led to think that the gonococcus in the male and female never dies, and that it is ever ready to produce pelvic mischief. Dr. Taylor said he has seen many young women who have suffered from uterine and pelvic disease after marriage, whose trouble was induced by instrumental manipulation at the hands of energetic young men, possessed of an ambition to be known as gynecologists. Minor surgery is certainly the cause of many cases of uterine and pelvic disease. In estimating the importance of gonorrheal infection, as a cause of female trouble, we must individualize rather than generalize.

Dr. Palmer said it has been stated, and correctly so, that in these cases of diseased tubes, of long standing, and containing large quantities of stagnant pus, the latter very frequently fails to show the presence of gonococci. On making a section of the structure of the tube itself, however, the gonococci will be found living in the stroma. It possesses a tendency to burrow underneath the surface. In one case of mono-cryptorchidism coming under his observation there was a gonorrheal infection of the incarcerated testicle, which became so painful that it had to be removed at the height of the inflammation. The gonococci were found in the intimate structures of this organ, which was of course rudimentary.

Dr. Glenn expressed the opinion that the gonococcus, unless it becomes imbedded in the mucous membrane, is not a difficult micro-organism to kill.

Dr. Bransford Lewis, of St. Louis, said the experiments of Wertheim have clearly shown the penetrative power of the gonococci.

(To be continued.)

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Recent Literature.

The Pocket Materia Medica and Therapeutics. A *Résumé* of the Action and Doses of all Officinal and Non-Officinal Drugs now in Common Use. By C. Henri Leonard, A.M., M.D., Professor of the Medical and Surgical Diseases of Women and of Clinical Gynecology, Detroit College of Medicine, etc. Second edition, revised and enlarged. Detroit, Mich.: The Illustrated Medical Journal Co. 1895.

In the preface of this book the author states, "while it is impossible to have a work upon this subject wholly original, the author does claim originality in the arrangement of the matter and its method of treatment." The arrangement of the drugs described is an alphabetical one and whatever originality is exhibited in the method of treatment is not worthy of commendation. The accounts of the crude drugs are too brief to be of much value; and under the head of "uses" is given merely a list of the diseases in which the drugs may be administered.

The Year-Book of Treatment for 1895. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co. 1895.

This yearly visitor now appears for the eleventh time. The brief abstracts from current medical literature of which it is made up differ widely in value; but few practitioners can look it through without finding among its manifold suggestions some practical and useful ones.

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SYPHILIS AS DESCRIBED AND TREATED BY THE CHINESE.

ACCORDING to Mar'hadour,[1] physician of the Marine, who claims extensive acquaintance with Chinese medicine, syphilis in all its essential features was known and described by the Chinese medical writers 2,637 years B. C. Hoang-Ty wrote of the pox and its connection with the initial chancre in terms which in plainness and accuracy are not surpassed in any of the modern works. Not only this, but he understood and taught the mercurial treatment of this disease. This, if true, is another illustration of the proverb that "the thing which is now hath been, and there is nothing new under the sun."

Tim là Thien Phao is the name of the acute malignant form "which bursts forth suddenly with violence, is febrile, rapid in its development, with the characters of a generalized infection at the onset." This form, "rare among us," is still "very common in Tonkin." The Annamite (Chinese) physicians class the accidents of syphilis as primary and tardy (secondary), and describe accurately the larvated visceral forms, and the strict relations between syphilis and certain nervous affections. Mercury is vigorously given in cerebral syphilis. Hereditary syphilis was known to the old writers, and the treatment was not materially different from that of the present day. Mercury is the basis of the Annamite treatment, and has been used "from fabulously remote periods." The pill form is much in vogue; pills of metallic mercury, of cinnabar, of the red oxide. Mercury is not the only metal employed; in the grave forms it is associated with arsenious oxide, with sulphate of copper, and in the cerebral forms with zinc. The mercury in the pills is combined with and masked by various aromatic resins, musk, camphor, etc. A favorite pill, which may be compared to the famous pill of Barberousse, consists of metallic mercury, with musk, camphor, canella, pine resin, and alum. Fumigations are used in the grave forms. The formula of these fumigations is as follows (only the ingredients being given): metallic mercury, red oxide of mercury, cinnabar, camphor, and nitrate of potash. The whole, reduced to fine powder, is rolled in a paper in the form of a cigarette, and four centimetres of this paper are burned per day. The patient is placed under a sheet forming a tent and absorbs the medicinal vapors by the lungs and skin. We have seen more than one imitation of this kind of treatment the past twenty-five years. To prevent salivation, the Annamite patient before going into the tent fills his mouth with water which he holds there during the entire fumigation, breathing through his nose. When the treatment is by mercurial pills, frictions of mercurial ointment are used at the same time.

In the cutaneous accidents in ulcerous wounds and gummata, an emplastrum resembling the *emplastrum Vigo* is employed; it consists of red oxide of mercury, pine resin, ferruginous argile, fish scales and oil.

Gum guaiacum was formerly used among the Chinese as among Europeans as a specific in syphilis.

The iodides are given in syphilis in their natural combinations. The Annamite pharmacopœia prescribes the *Hai-Dai*, a species of ulva, the *Hai-tao*, a fucus, and a laminaria; with these are associated the bones of the cuttle-fish, and indigo. The whole, reduced to powder, is taken in an aromatic infusion with bitter orange peel. This is really a treatment by the iodides in their combinations in nature.

The writer in the *Bulletin* intimates that the mercurial treatment of syphilis was borrowed from the Chinese by the Arabs and first introduced by them into Europe.

He gives an account of the treatment of syphilis among the rich. A hen is fed for several days on rice-pellets containing red oxide of mercury, ferruginous argile, and metallic mercury. The fowl is then killed, and a broth is made of its flesh and eaten by the patient. The bones, the entrails and the feathers are placed on burning coals and burned; the patient breathes the fumes. . . . The mercury fixes itself in the tissues before being eliminated; it sojourns there under the form of chlorides and of peptonates, and has been found in the liver and other viscera. According to certain European authors, the metal has been found in a pure state in the bones: "*Dissecto cadavere, circa juncturas, guttulæ tremulæ hydrargyri inventæ sunt*" (Tisitanus). This method bears some resemblance to that of Roussin, who caused hens to ingest salts of iodine and bromine that they might lay medicinal eggs.

From the above account, it will be seen that there is some reason for considering the Annamites as the inventors of the peptonates of mercury!

On reading Mar'hadour's article, we are reminded of the fact that Jourdan, Rosenbaum, and Cazenove some years ago wrote learnedly to prove that syphilis existed not only before the fifteenth century, but among the Greeks and Romans, and if we do not find any specific doctrinal statement to this effect in the classic writings, we do find mention of nearly all of the multiple symptoms which characterize this disease in its different stages from the primary chancre and the bubo to the secondary and tertiary (cutaneous, mucous, osseous and other) lesions. Hence, it is argued, the disease existed, though it was not understood and classified: "*De nominibus non est curandum cum res ipsa nota fuit.*"

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[1] Bulletin général de Thérapeutique, September 30, 1895, p. 257.

Edmond Dupuy has recently written a book to the same purport, in which he has amassed in one bulky volume all those expurgated portions of the later classical writers which do not appear in ordinary copies, the result being an *omnium gatherum* of filth. Despite all these learned efforts, it does not yet appear that syphilis was known in antiquity to any branches of the great Aryan family as it was known to the Chinese, if we may believe the writer in the *Bulletin de Thérapeutique* from whom we have quoted.

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THYROIDISMUS.

IT is now two years since attention was called in English medical journals to certain unpleasant symptoms which often occurred after a course of thyroid feeding; to these symptoms — the principal of which were palpitation, headache, dizziness, nausea, vomiting, conditions of excitement followed by collapse, etc., — the term thyroidismus has been applied.

Dr. Otto Lanz publishes[1] an account of interesting experimental studies which he has carried out with regard to this subject.

Lanz's attention was attracted to the study of these cases by the suggestive observation which he made, both in Kocher's clinic and in private practice, that the glycerine extract of the thyroid gland furnished by a certain English drug firm did not produce the symptoms, while a severe grade of thyroidismus, so called, was produced by the administration, even for a day or two, of four grammes of the English thyroid tablets.

He concluded, therefore, that the thyroidismus was a specific result of the administration of thyroidin, and that the glycerine extract by its method of preparation was deprived of these properties, or that, on the other hand, the English tablets were not made up from entirely fresh thyroids, and that therefore the thyroidismus was not so much a specific result of the administration of the thyroid gland, as an intoxication from the absorption of products of decomposition. He was led to favor this latter view by the observation that fresh thyroid gland exposed to the air underwent decomposition much more rapidly than ordinary meat, in fact within twenty-four hours gave off a strong odor of decomposition. From these considerations he was led to infer that after all, thyroidismus might be nothing more nor less than a kind of "sausage poisoning."

On experimental trial of the question, mice being the animals employed, it was found that mice fed on thyroid tablets (Merck's and the English preparations) died with symptoms of thyroid intoxication, before the total amount taken had amounted to one gramme, while mice fed on fresh thyroids survived often until fifty grammes had been taken. These experiments serve at least to show that ptomaine poisoning probably often plays an important part in the production of thyroidismus; but since the symptoms and death of the animals finally resulted from the administration of fresh thyroids, the whole symptom complex cannot be referred to this cause. The condition called thyroidismus is a complex of symptoms due to the ingestion of thyroid gland (true thyroidismus) and of poisoning from the absorption of products of decomposition. The glycerine extract of fresh thyroids did not produce the symptoms with the same rapidity and severity as the thyroid tablets, but corresponded in its effects to the fresh thyroids.

A corresponding result followed a clinical comparison of the methods of administering thyroids to goitrous patients in Kocher's clinic, namely, that the thyroid tablets produced intoxication symptoms with much greater rapidity and severity than the glycerine-extract or fresh thyroids.

Further interesting experimental evidence is given in the paper, showing that in dogs and guinea-pigs, the administration of thyroids produces atrophy of the thyroid gland, and that the toxic principle, the thyroidismus, can apparently be transmitted either through the placental circulation or the milk from the mother to the young. This was shown in the case of female guinea-pigs who gave birth to litters while undergoing thyroid feeding. The young were apparently normal at birth, but failed to develop as fast as other guinea-pigs of the same age, were thinner than the control animals, and showed stiffness of the hinder extremities.

Lanz sums up his paper as follows:

(1) Thyroidismus is due to two component causes: (*a*) a poisoning from the absorption of putrid material, (*b*) a specific effect of the thyroid gland *per se.*

(2) The latter effect, the true thyroidismus, or as it is better named, hyperthyrosis, varies in intensity according to the dose and method of preparation of the thyroid material, and according to the species and resisting power of the animal experimented upon.

(3) The toxic principle which produces thyroidismus is capable of communication either by the placental circulation or the milk from a mother to her young.

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ON THE TRANSMISSION OF SCARLATINA BY THE INTERMEDIATION OF A LETTER.

GRASSET,[1] relates a case of scarlatina transmitted by letter. The patient was a little girl aged nine years, living with her grandmother, some distance from her paternal home. No case of scarlatina had been before noted for many years in that locality.

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[1] Deutsche med. Woch., September 12, 1895.

[1] Annales d'Hygiene Publique, August, 1895.

The little girl during the period of desquamation wrote a letter to her parents, and as the peeling was abundant, she enclosed several of the epidermic scales in the letter. The letter after having been read by the father and mother was handled by the little brother, aged two years, who, six days and a half to seven days afterwards came down with scarlet fever.

This case resembles that recorded by Sanné. A woman and her daughter inhabiting Bretagne received from Germany a letter in which the writer announced that she had just had scarlet fever, and that she was desquamating so profusely that in writing she had been obliged to shake the paper several times to remove the scales which had fallen upon it. Several days afterward the mother and daughter were taken down with the scarlet fever; the mother succumbed, and the daughter got well.

The transmission of scarlet fever by books is also possible, and this intermediary of contagion must always be borne in mind in speculating as to the mode of origin of obscure cases. Dr. Fox (on the authority of *La Semaine Médicale*, 1889, page 94), having observed three cases of scarlet fever in a house, was led to suspect a book loaned from a public library as being the medium of contagion. An investigation showed that this book had been loaned a little while before to a family in which there had been a case of scarlet fever, and had been read during convalescence by the sick person.

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MEDICAL NOTES.

Picric Acid for Burns.— It is stated that at the Hôpital de la Charité in Paris the usual treatment of burns has been superseded by the use of picric acid as a lotion, in aqueous solution of about five grammes to the ounce. Its virtues are said to have been accidently discovered by a medical student, and the application not only affords immediate relief from pain but hastens the healing very much.

The Treatment of Diphtheria with the Antitoxin.— Welch (*Bulletin of the Johns Hopkins Hospital*, vol. vi, Nos. 52, 53, p. 97) has collected from all accessible sources 7,166 cases of diphtheria treated with the antitoxin, showing a mortality of 17.3 per cent., as compared with an estimated mortality of 42.1 in cases treated previously or simultaneously without the antitoxin. In 648 cases treated with the antitoxin in which tracheotomy was performed the mortality was 39.8 per cent.; in 342 in which intubation was practised the mortality was 28.9 per cent.; in 26 in which intubation was followed by tracheotomy the mortality was 53.8 per cent.; in 211 cases in which it is not stated whether tracheotomy or intubation was practised the mortality was 40.2 per cent. The estimated mortality in cases treated simultaneously or previously without the antitoxin was 64.5 per cent. after tracheotomy and 62.4 per cent. after intubation.

A Death from Murphy's Button.— At a recent meeting of the New York Surgical Society, Dr. Abbe presented a specimen from a case of strangulated hernia, in which five inches of gangrenous bowel had been resected, and an anastomosis effected by Murphy's button. The patient died forty-eight hours after the operation, and it was found at a second operation performed shortly before his death that the weight of the button had caused it to gravitate to the bottom of the pelvis, and caused a sharp kink at the site of the anastomosis. Dr. Rushmore thought that the gut must have been paralyzed by the obstruction or the muscular coat would have been able to force the contents through the lumen of the button and straighten out the kink.

Contraction of the Lumen of the Intestine after Anastomosis by Murphy's Button.— Parkhill, of Denver, Col., reports in the *Medical News* of October 12th, a case in which entero-colostomy was performed for the exclusion of a cecum and ascending colon which were riddled with fecal fistulæ as a result of appendicitis, the largest size Murphy button being employed. Three months later an operation was done for the excision of the diseased cecum, at which the finger was passed into the colon, and the opening at the site of the anastomosis was found to be so small as to barely admit the tip of the index finger as far as the base of the nail. The circumference of the finger at that point was two inches, while that of the button which had been employed was three and a quarter inches. This is believed to be the first time the amount of contraction of the lumen after the anastomosis by Murphy's button, has been measured on the living subject, and the question whether such contraction will continue, is an interesting one. The writer says that contraction or no contraction the anastomosis by the Murphy button was the correct procedure in this case, as the patient's condition precluded any more time-consuming method. This case was undoubtedly one of that class to which, according to the opinion expressed in our editorial of October 3d, the use of the Murphy button should be restricted, namely, "those cases in which it is necessary to hasten in order that the patient may survive the shock of the operation."

New Anatomy Law in Wisconsin. — Section 1,437, of chapter 58, of the annotated statutes of Wisconsin, was amended by the last legislature so that every public officer having charge of the body of any deceased person, required to be buried at the public expense, not merely "may," but "shall without charge," deliver such body to that member or agent of the State or any county medical society, or of any legally organized medical college who shall first present to him an order therefor, signed by the president or secretary thereof, "stating " that such body will be used only for the promotion of anatomic science within the State, and that the remains shall be afterward decently buried without public charge. But, as heretofore, no body of any person who in his last sickness requests to be buried, or of any stranger or traveller who shall have suddenly died, shall be so disposed of.

And no person so having charge of any such body, it is added, shall sell or deliver the same to any one to be used for scientific or any other purposes outside of the State of Wisconsin. Any officer or other person violating any of the provisions of this act shall be liable to the person, society or corporation aggrieved in the sum of $50 damages, to be recovered in an action therefor.

NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, October 16, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 92, scarlet fever 38, measles 1, typhoid fever 45.

BOARD OF HEALTH OF PORTLAND, ME.— The following rules and regulations have been adopted by the Portland, Me., Board of Health for the disinfection of houses wherein persons have been quarantined for infectious diseases.

(1) Wherever diphtheria or scarlet fever is found in a family, no child or other member of the household shall leave the premises except by special permit of the Board of Health.

(2) All clothing used by the patient during sickness should be put into a box, nailed up, taken away and burned in the box.

(3) The clothing of the attendant, bed-linen, towels, blankets, handkerchiefs, used during sickness, should, before removal from the room, be placed in a tub or pail containing one pound of chloride of lime to four gallons of water, and allowed to remain therein two or three hours, then taken to the wash room and boiled for two hours.

(4) The mattress should be burned or thoroughly sponged in solution A.

(5) All pillows should be burned.

(6) If the carpet is left on the floor of the sick room, it should be burned or sponged with solution A.

(7) The bedstead, furniture, woodwork and floor should be washed with solution A.

(8) All pictures in the room, papered or tinted walls, should be rubbed thoroughly with bread, and the walls when painted should be washed with solution A.

(9) All other rooms of the house, closets and contents, should be thoroughly dusted and cleansed and then fumigated, by first making the air moist with steam and then burning one sulphur candle in each room.

(10) Before any members of the family quarantined will be allowed to go in public, they must take a bath and thoroughly wash their hair.

NOMINATION OF DR. JULIAN A. MEAD.— Dr. Julian A. Mead, of Watertown, has been nominated by Governor Greenhalge for the position of Member of the State Board of Health of Massachusetts.

THE LYMAN PRIZE.— Notice has been sent to prospective competitors that essays offered in competition for the Lyman Prize for this year must be in the hands of the Secretary of the City Hospital Club, Dr. Paul Thorndike, 80 Marlborough Street, Boston, before January 15, 1896.

THE PERKINS INSTITUTION FOR THE BLIND.— According to the report of the trustees of the Perkins Institution and Massachusetts School for the Blind, which was read at the annual meeting of the corporation yesterday afternoon, there are 155 pupils in the school and 64 in the kindergarten, an increase of seven in the one case and five in the other, over the number for last year. There are 14 workmen in the shop, and 13 blind teachers in all departments. The present post-graduate course of instruction stops about three years short of that given in the Latin School, and in other schools preparatory for college. Steps have been taken to carry instruction further, and eventually to cover, first, the requirements for admission to the best American colleges; second, further instruction in the higher branches of music; third, commercial laws and the subjects taught in the business colleges.

BEQUESTS TO CHARITABLE INSTITUTIONS. — By the will of the late Colonel William Leverett Chase, of Brookline, on the death of certain legatees the sum of $10,000 is left to the Massachusetts General Hospital. In a codicil, executed July 20, 1895, the testator bequeathes $5,000 to the president and fellows of Harvard College to establish a scholarship in the Medical School, to be known as the C. B. Porter scholarship, and to the Massachusetts General Hospital, $5,000 to establish a free bed, to be known as the C. B. Porter free bed.

DECREASE IN MORTALITY IN BOSTON. — The returns of the Boston Board of Health for the month of September, 1895, show, in comparison with last year, a marked increase in the number of cases reported, and at the same time a marked decrease in the mortality. The figures with regard to diphtheria are especially striking. During the month 345 cases of diphtheria were reported, but out of this large number there were but 51 deaths, an average of about 15 per cent. For the corresponding month of last year there were only 250 cases reported, but out of that number 71, or about 30 per cent., died. The decrease is believed to be due to two causes: first, the early notification of cases by the physicians who inspect the school children; second, the use of antitoxin. The excellent facilities for treatment afforded by the new contagious hospital may also have played a part. One of the inspectors recently found in a certain school within a few days five children suffering from diphtheria. The privy vaults at the school were found in an unhealthy condition, and the school board notified that if the matter was not attended to the school would be closed. During the month there were 226 cases of typhoid fever reported, as against 196 for the corresponding month of a year ago, an increase of 30, but the deaths for the first named month were but 28, as against 30 for September of last year. The increase in typhoid fever is coincident with the low condition of many sources of water-supply, due to the drought. Owing to the extremely hot weather during the last of the month the infant mortality rose to a marked degree, as evidenced by the fact that there were 131 deaths from cholera infantum, as compared with 89 for the preceding year.

NEW YORK.

A DEATH FROM NITROUS OXIDE. — Mrs. Flora Joseph, forty-two years of age, died on October 5th, under the influence of nitrous oxide gas in a dentist's chair in East 86th Street. Artificial respiration, the hypodermic use of whiskey and strychnia, and other appropriate measures were promptly resorted to, but without result.

"FRONT" AND "REAR" MORTALITY.— An examination of the mortality in the tenement districts of the city shows a marked difference between the death-rate of the front and that of the rear houses. According to figures recently published, the Thirteenth Ward presents a "front" mortality of only 20.76 per thousand annually, while the rate is 25.75 in the rear houses. In the Seventeenth Ward there is a difference of about 20 per cent. in front and rear deaths per thousand; while in the First Ward it runs up to over 100 per cent. (29.03 per thousand in the front and 61.97 in the rear). The difference in the death-rate among children under five years of age is even more marked. In the Thirteenth Ward it is 25 per cent., and in the Ninth about 40, while in the First Ward the mortality is 109.58 front to 208.54 rear.

THE FIRST BOTANIC GARDEN IN NEW YORK.— In connection with the great botanic garden about being established in Bronx Park it is of interest to recall that the first botanic garden in New York was founded in 1801 by Dr. Hosack, who was one of the leading promoters of science of his time. A writer in the current number of the *Popular Science Monthly* states that the Elgin Botanic Garden, which Dr. Hosack established at his own individual expense, was situated about three miles from the city, occupying land on what is now Fifth Avenue, extending from 47th to 51st Streets. The grounds were skilfully laid out and planted with some of the most rare and beautiful forest trees, while an extensive and ornamental conservatory was erected for the cultivation of tropical and green-house plants, as well as those devoted to medical purposes, more especially those of our own country. At one time there were under cultivation nearly fifteen hundred species of American plants, besides a considerable number of rare and valuable exotics. The State afterward purchased the garden from Dr. Hosack, but, like many other public works unconnected with politics, it was suffered to go to ruin.

TETANUS CURED BY ANTITOXIN.— Dr. Gibier, of the Pasteur Institute, has received word that a second cure of tetanus has been effected by the antitoxin furnished by the Institute. The case was under the care of Dr. J. F. Dyer, of Ottawa, Ill.

DEATH OF DR. POHLE.— Dr. J. G. Pohle died on October 7th of Bright's disease and pneumonia. He was born in Berlin, Germany, in 1829, but came to this country when quite young. As a medical student he was a pupil of the late Dr. Chilton, who was one of the leading practitioners of the city at the time, and resided at the corner of Broadway and Broome Street. He afterwards married a daughter of Dr. Chilton and eventually succeeded to his practice. A number of years ago, however, he retired from practice and devoted himself to general scientific pursuits. He was State Geologist between 1860 and 1870. He was an inventor of much repute, and of late years had given his attention largely to mining interests in the West.

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Miscellany.

BOSTON DISPENSARY.

The statistics of this institution for the year ending September 30, 1895, are as follows:

The number of new patients treated at the Central Office is 27,702, classified as follows:

Medical Department. — Men, 3,248; women, 5,550; children, 3,925; total, 12,723.

Surgical Department. — Men, 2,037; women, 1,445; children, 849; total, 4,331.

Department for Diseases of the Skin. — Men, 707; women, 533; children, 336; total, 1,576.

Department for Diseases of the Nervous System.— Men, 582; women, 672; children, 72; total, 1,326.

Department for Diseases of the Throat and Nose.— Men, 758; women, 1,003; children, 687; total, 2,448.

Department for Diseases of Women.— Women, 1,093.

Department for Diseases of the Eye. — Men, 260; women, 464; children, 421; total, 1,145.

Department for Diseases of the Ear. — Men, 223; women, 216; children, 217; total, 656.

Department for Diseases of the Genito-Urinary System. — Men, 1,353; women, 40; children, 1; total, 1,394.

Department for Diseases of the Rectum.— Men, 94; women, 55; children, 5; total, 154.

Orthopedic Department. — Men, 59; women, 69; children, 56; total, 184.

Dental Department.— Men, 172; women, 194; children, 306; total, 672.

The number of visits made by patients, old and new, is 68,218, classified as follows:

Medical, 23,857; surgical, 44,361; total, 68,218.

The number of patients treated in the Districts is 14,885, including 342 cases of midwifery, classified as follows:

Men, 2,474; women, 5,653; children, 6,758; total, 14,885.

The results of treatment are as follows:

Discharged, cured or relieved.	13,583
Removed to hospitals	1,050
Died	246
Remaining under treatment	92
	14,971
Under treatment at last annual report	86
	14,885
The number of visits made by the district physicians	24,535
The number of patients treated at the Central Office and in the districts is	42,587
The number of cases of midwifery attended during the year	342
The number of cases of midwifery attended since July, 1856	7,635
Whole number of patients since October, 1796	1,291,317
Whole number of patients since July, 1856	1,172,514
Average daily attendance at the Central Office	224
Largest number present any one day, March 11th	345
Smallest number present any one day, December 27th	61
Number of recipes put up at the Central Office	70,516
Number of house recipes	58,340
Number of district recipes	12,176
Largest number put up in one day, February 18th	377
Smallest number put up in one day, December 27th	72

The list of medical officers for the ensuing year is as follows:

Surgeons.— Drs. E. O. Otis, F. M. Briggs, A. Thorndike, R. E. Darrah.

Physicians.— Drs. R. Disbrow, T. M. Rotch, H. Williams, E. M. Buckingham, J. S. Howe, W. F. Temple, H.

Jackson, R. W. Greenleaf, S. Breck, G. A. Sargent, E. L. Twombly, W. E. Fay, W. H. Prescott, J. J. Thomas, A S. Knight, H. D. Arnold, B. Tenney, F. R. Tower.

Department for Diseases of the Skin. — Drs. F. B. Greenough, Abner Post.

Department for Diseases of the Nervous System. — Drs. Frederic Coggeshall, W. R. Woodbury.

Department for Diseases of the Throat and Nose.— Drs. John W. Farlow, F. C. Cobb, W. S. Boardman, W. E. Chenery.

Department for Diseases of Women.— Drs. J. B. Swift, R. A. Kingman, G. Haven, M. Storer.

Department for Diseases of the Eye. — Drs. F. E. Draper, E. L. Parks.

Department for Diseases of the Ear.— Drs. W. Preble, E. E. Doble. Assistant, Dr. J. Hicks.

Department for Diseases of Genito-Urinary System. — Drs. G. W. Allen, C. M. Whitney, J. B. Blake, F. G. Balch.

Department for Diseases of the Rectum.— Dr. W. J. Otis. Assistant, Dr. J. C. Stedman.

Obstetric Department.— Dr. C. M. Green. Assistants, Drs. E. Reynolds, C. W. Townsend.

Orthopedic Department. — Drs. E. S. Pease, E. H. Nichols.

Pathologist.— Dr. E. M. Greene.

Dentist.— A. H. Fisher, D.M.D.

Dr. C. E. Fillebrown, in charge Roxbury Central Office.

District Physicians.— Drs. G. M. Muttart, N. C. Haskell, W. L. Edwards, E. C. Stowell, H. A. Lothrop, J. W. Bartol, W. F. Gay, A. A. Wheeler, J. S. Phelps, C. M. Smith, J. W. Dewis.

Apothecary. — George Lachambre. Assistant, E. C. Dodge.

W. H. H. Hastings, *Superintendent.*

THE FIRST CRY.

Olshausen[1] opposes the position of Ahlfeldt, who claimed that certain movements which can be felt within the uteri of pregnant women were produced by feeble respiratory movements on the part of the child, and that the inspiration which we call the first of a new-born child is not really the first, but the first deep inspiratory movement. Olshausen holds that the movements felt by Ahlfeldt were the aortic pulsations transmitted through the uterus to the abdominal wall. He also opposes the view taken by Schwartz that the cause of the first inspiration is dependent upon the interruption of the placental circulation, and on the basis of numerous observations has come to the conclusion that apnea alone does not determine the first respiratory movement, but that in head presentations its cause lies in the great compression to which the thorax is subjected during the passage through the vagina, and its sudden release at the moment the breech is born. In this manner the end of parturition brings with it, under normal conditions, a naturally produced movement of artificial respiration. In breech presentations and Cæsarean sections this "artificial respiration" will not be present, and for this reason children coming into the world under these conditions are apt to lie in an apneic condition for some time before normal respiration is established.

This sudden release of pressure might well account for the recognized danger in breech presentations, of respiratory movements taking place upon the escape of the body, and before the head is released from the vagina, which in some cases have caused death from inhalation pneumonia.

AN AUDIBLE INTRA-UTERINE CRY.

Dr. Wilh. Brüll, of Deés, publishes in the *Wiener klin. Wochenschrift*, No. 39, 1895, an account of an obstetric case to which he was called, after two midwives had made unsuccessful efforts at extraction, and labor had been in progress forty-eight hours. On entering the room he heard distinct cries proceeding from the uterus of the patient. These cries were loud enough to be heard in adjoining rooms. On examination a breech presentation was found, and in order to bring down a foot a hook was employed, the application of which caused a sharp cry from the fetus. The child was born asphyxiated, but revived under artificial respiration, and a dead twin fetus was then extracted. The mother and child did well.

Inasmuch as certain colleagues of Dr. Brüll were unkind enough to suggest that he and the midwives had mistaken the rumbling of gas in the mother's bowels for the cries of the fetus, he publishes the account of the case, and a statement of the conditions under which it is possible for an audible intra-uterine cry to be uttered. These are (1) interruption of the placental circulation, (2) entrance of air into the uterine cavity, (3) absence of amniotic fluid, or at least its partitioning off in such a way as not to enter the air-passages of the fetus. There can be little doubt that there was excellent opportunity for the coincidence of these conditions in this case, the efforts of the midwives having undoubtedly afforded ample opportunity for the entrance of air.

Attention is called to the fact that a case of this sort might give rise to medico-legal complications. In case the intra-uterine cries had been heard in adjoining rooms and the child were subsequently still-born, a strong suspicion of child murder might arise. In the case under consideration the child's life was saved only by rapid extraction and artificial respiration.

This case of Dr. Brüll's would seem to confirm the view of Ahlfeldt, in contra-distinction to that of Olshausen which is given in the preceding article on "The First Cry," in that it proves the possibility of intra-uterine respiratory movements, at least under favorable conditions.

Correspondence.

REVIVAL OF THE *INDEX MEDICUS*.

1627 Walnut St., Philadelphia, Oct. 14, 1895.

Mr. Editor.— Last June a movement was started in Philadelphia to endeavor to revive the *Index Medicus* by the formation of a local committee to solicit subscriptions. The members of this committee have endeavored to obtain subscriptions from their professional friends at the rate of $25 per year for five years. A proposition was made by us to prominent men in New York and Boston that similar committees should be organized in those cities. I do not know whether formal organizations have taken place in New York and Boston. We in Philadelphia have been at work ever since June, and have been able to send to the editors of the *Index Medicus*, thirty-seven subscriptions at $25. Nearly all of these subscribers have agreed to continue their subscriptions for five successive years. Perhaps the printing of this short account of our work will give encouragement to those in other parts of the country who are endeavoring to revive interest in a publication which the American medical profession must not allow to die.

Yours very truly,

John B. Roberts,

Sec'y Committee on reviving Index Medicus.

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[1] Berliner klin. Woch., 1894, No. 48.

METEOROLOGICAL RECORD,

For the week ending October 5th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..29	30.04	58	61	54	71	82	76	E.	S.E.	18	13	C.	O.	
M..30	29.74	56	64	49	83	60	72	N.W.	W.	4	16	F.	C.	.15
T.. 1	30.24	50	57	42	60	52	56	W.	S.W.	14	9	C.	C.	
W.. 2	30.22	57	70	44	56	60	58	W.	S.W.	7	11	C.	C.	
T.. 3	30.17	58	70	47	68	64	66	W.	N.E.	7	4	C.	F.	
F.. 4	30.22	53	58	48	83	81	82	N.E.	N.E.	10	10	F.	O.	
S... 5	29.97	52	60	45	86	78	82	N.	N.E.	14	7	O.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, October 5, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,704,506	704	302	18.48	14.42	9.94	.98	4.48
Chicago	1,227,382	495	223	26.40	9.60	14.20	2.60	8.60
Philadelphia	1,163,864	337	—	19.43	10.44	5.80	4.35	7.54
Brooklyn	1,100,000	374	201	24.70	9.10	13.00	.78	6.76
St. Louis	560,000	—	—	—	—	—	—	—
Boston	494,205	220	101	20.60	12.15	9.90	2.70	5.85
Baltimore	496,315	182	70	18.15	14.30	8.25	3.30	5.50
Cincinnati	333,970	99	38	11.00	11.00	6.00	4.00	—
Cleveland	325,000	—	—	—	—	—	—	—
Washington	285,000	114	52	24.64	7.92	9.96	10.56	2.97
Pittsburg	272,000	100	21	28.00	10.00	15.00	5.00	4.00
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	25	13	20.00	32.00	12.00	4.00	—
Charleston	65,165	30	17	13.33	16.66	13.33	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	98,687	40	20	37.50	2.50	32.50	—	2.50
Fall River	88,020	43	24	46.60	6.99	41.94	4.66	—
Lowell	84,359	39	22	25.60	5.12	17.92	5.12	2.56
Cambridge	81,519	24	12	25.00	20.80	25.00	—	—
Lynn	62,355	—	—	—	—	—	—	—
New Bedford	55,254	19	6	5.26	15.78	5.26	—	—
Springfield	51,534	11	2	9.09	27.27	—	—	9.09
Lawrence	52,153	26	—	11.55	11.55	7.70	—	—
Holyoke	40,149	—	—	—	—	—	—	—
Salem	34,437	10	4	10.00	20.00	10.00	—	—
Brockton	33,157	8	3	25.00	—	12.50	—	—
Haverhill	30,185	5	1	—	20.00	—	—	—
Malden	29,706	10	6	20.00	20.00	20.00	—	—
Chelsea	31,295	5	1	—	20.00	—	—	—
Fitchburg	26,394	10	4	30.00	10.00	10.00	10.00	10.00
Newton	27,622	14	5	35.70	—	14.28	—	14.28
Gloucester	27,663	—	—	—	—	—	—	—
Taunton	27,093	13	3	—	—	—	—	—
Waltham	20,877	5	0	—	—	—	—	—
Quincy	20,712	6	2	16.66	16.66	—	—	—
Pittsfield	20,447	—	—	—	—	—	—	—
Everett	18,578	4	2	—	50.00	—	—	—
Northampton	16,738	5	0	—	20.00	—	—	—
Newburyport	14,554	5	3	40.00	—	40.00	—	—
Amesbury	10,920	—	—	—	—	—	—	—

Deaths reported 3,086; under five years of age 1,196; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 675, consumption 358, acute lung diseases 260, diarrheal diseases 352, diphtheria and croup 173, typhoid fever 80, whooping-cough 30, measles 11, scarlet fever 9, cerebro-spinal meningitis 9, malarial fever 8, erysipelas 3.

From whooping-cough Brooklyn 9, New York 7, Chicago and Boston 4 each, Philadelphia 3, Washington, Cincinnati and Worcester 1 each. From measles New York 5, Brooklyn 3, Philadelphia, Boston and Pittsburgh 1 each. From scarlet fever Pittsburgh 3, New York 2, Philadelphia, Boston, Washington and Nashville 1 each. From cerebro-spinal meningitis New York 5, Baltimore, Lawrence, Brockton and Quincy 1 each. From malarial fever Brooklyn 4, New York 2, Baltimore and Boston 1 each. From erysipelas New York, Chicago and Philadelphia 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending September 21st, the death-rate was 19.8. Deaths reported 4,028; acute diseases of the respiratory organs (London) 141, whooping-cough 71, fever 68, diphtheria 65, measles 57, scarlet fever 29, small-pox (London 2, Oldham 1) 3.

The death-rates ranged from 9.1 in Croydon to 32.9 in Sunderland; Birmingham 20.2, Bradford 21.7, Brighton 21.2, Bristol 16.0, Gateshead 28.3, Hull 31.8, Leeds 22.0, Leicester 19.4, Liverpool 26.6, London 16.0, Manchester 25.7, Newcastle-on-Tyne 19.9, Nottingham 21.2, Portsmouth 22.1, Sheffield 24.5.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530, for the week ending September 29th, the death-rate was 21.0. Deaths reported, 4,269; acute diseases of the respiratory organs (London) 173, diarrhea 604, diphtheria 81, whooping-cough 69, measles 50, fever 57, scarlet fever 50, small-pox (London) 2.

The death-rates ranged from 14.7 in Huddersfield to 30.5 in Gateshead: Birmingham 21.2, Bradford 19.6, Cardiff 20.8, Derby 18.7, Leeds, 20.8, Leicester 16.1, Liverpool 28.6, London 18.2, Manchester 29.9, Newcastle-on-Tyne 22.2, Nottingham 24.6, Portsmouth 16.1, Sheffield 24.3, Sunderland 29.5. West Ham 19.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 4, 1895, TO OCTOBER 10, 1895.

PROMOTIONS.

Major William E. Waters, surgeon, to be deputy surgeon-general with rank of Lieut.-Colonel, October 1, 1895, *vice* Billings, retired.

Captain Louis S. Tesson, assistant surgeon, to be surgeon with the rank of Major, September 26, 1895, *vice* Matthews, retired.

Captain Edwin F. Gardner, assistant surgeon, to be surgeon with the rank of Major, October 1, 1895, *vice* Waters, promoted.

SOCIETY NOTICE.

Boston Society for Medical Improvement.—A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, October 21st, at 8 o'clock.

Dr. Walter Channing will present a paper on the "Importance of the Frequent Observation of the Temperature in the Diagnosis of Chronic Tuberculosis of different Localization." Drs. R. H. Fitz, A. T. Cabot, F. C. Shattuck, E. G. Cutler and A. L. Mason will take part in the discussion.

Dr. M. H. Richardson will report a "Case of Fibroid Tumor of the Uterus, complicated with Stone in the Bladder: Operation; Recovery."

James G. Mumford, M.D., *Secretary*.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be delivered on October 24th, at 8 p. m., at the Medical School by Prof. Wm. T. Sedgwick. Subject: "The Work of the State Board of Health." The profession are invited.

BOOKS AND PAMPHLETS RECEIVED.

The Osteopathic Fad. By A. J. Steele, M.D., St. Louis, Mo. Reprint. 1895.

Practical Uranalysis and Urinary Diagnosis; a Manual for the Use of Physicians, Surgeons and Students. By Charles W. Purdy, M.D., Queen's University, Fellow of the Royal College of Physicians and Surgeons, Kingston; Professor of Urology and Urinary Diagnosis at the Chicago Post-Graduate Medical School. Author of "Bright's Disease and Allied Affections of the Kidneys"; also of "Diabetes, its Causes, Symptoms and Treatment." Second edition, with numerous illustrations, including photo-engravings and colored plates. Philadelphia: The F. A. Davis Co. 1895.

A Text-Book on Nervous Diseases. By American Authors. Edited by F. X. Dercum, M.D., Clinical Professor of Diseases of the Nervous System in the Jefferson Medical College, Philadelphia. List of contributors: N. E. Brill, M.D.; Chas. W. Burr, M.D.; Joseph Collins, M.D.; Charles L. Dana, M.D.; F. X. Dercum, M.D.; Geo. E. de Schweinitz, M.D.; E. D. Fisher, M.D.; Landon Carter Gray, M.D.; C. A. Herter, M.D.; George W. Jacoby, M.D.; William W. Keen, M.D.; Philip Coombs Knapp, M.D.; James Hendrie Lloyd, M.D.; Charles K. Mills, M.D.; S. Weir Mitchell, M.D.; Charles A. Oliver, M.D.; William Osler, M.D.; Frederick Peterson, M.D.; Morton Prince, M.D.; Wharton Sinkler, M.D.; M. Allen Starr, M.D.; James C. Wilson, M.D. Philadelphia: Lea Brothers & Co. 1895.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum.......... 2
Antikamnia Chemical Company...Antikamnia 3
Apollinaris Co.......... 1
Ayer's Hygienic Coffee..........
Baker, L. W., M.D.......... Riverview 1
Baker, Dr. W. H..........Cara 1
Battle & Co..........Bromidia 2
Bellevue Hosp. Med. Col..... Sessions of '94-95 1
B. H. R. Distilling Co.......... 1
Boehringer & Soehne..........Ferratin 1
Borine Chemical Co..........12, 2
Bowdoin College..........Medical Department 1
Bowker, Dr. E. M..........Vaccine Virus 2
Boylston Medical Prize Questions..........
Breitenbach Co., M. J..........Pepto-Mangan
Castle, W. & Co..........Steam Sterilizer 2
Channing, Dr. Walter.......... 1
Chauncy Hall School.......... 3
Cocke, Dr. James R.......... 1
Codman & Shurtleff..... Surgical Instruments
Coll. of Physicians and Surgeons, Boston... 1
Coll. Physicians and Surgeons, Baltimore, 1
Companion Wanted..........
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Goldthwaite, Dr. S. V.......... 1
Gould's Medical Dictionary.......... 2
Graduate Wanted..........
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Harvard Baby Food Co.......... 1
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Phillips Chemical Co., The Charles H.......
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Planten, H., & Son..........Capsules 2
Polk, R. L. & Co..........Med. and Surg. Register 2
Purdue Frederick Co., The..........
Ring, Dr. Allan Mott..........Nervous Diseases 1
Russell, Dr. F. W..........Card 1
Schulze-Berge & Koechl..........Migranin, etc. 23, 3
Scott & Bowne..........
Stedman, Dr. Henry R..........Card 1
Strong, Dr. S. E..........Sanitarium 2
Thayer, Henry & Co.......... 2
Theodore Metcalf Co..........Coca 1
To Let..........
Twitchell, Dr. George B..........Card 1
Tyree, J. S..........Antiseptic Powder 2
University of Maryland.......... 1
University of Vermont,.......... 1
Walker Pharmacal Co..........Phytoline 2
Walnut Lodge Hospital.......... 1
Warner, Wm. R., & Co..........Pills, etc. 1
Waterman, Dr. Thomas..Animal Vaccine Virus
Weeks & Potter Co..........Quinona 3
Wheeler, Dr. T. B..........Phosphates 2
White, Dr. Walter H..........Card 1
Willard, Dr. A. J..........Card 1
Woman's Hospital, Lowell.......... 1
Woman's Medical College, Baltimore....... 1
Woman's Med. Coll..of the New York Infirmary 1
Woodward, L. F..........Stammering 1
Yale University..........Medical Department 1

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Every candidate for admission, not holding a degree of arts or science, must pass a written examination on entrance to this School, in English, L Physics, General Chemistry and any one of the following subjects: French, German, Elements of Algebra, or Plane Geometry, Botany. The admissio amination for the coming year will be held June 25, at Boston, Quincy, Andover, Groton, Southborough, Worcester, Mass., Exeter, Concord, N. H., York, Albany, Buffalo, Philadelphia, Washington, Cleveland, Cincinnati, Chicago, St. Louis, Minneapolis, Denver, San Francisco, Portland, Oregon, B Germany, and Tokyo, Japan; on September 23, at Boston, only. On and after June, 1896, an examination will be required in the following subjects: 1. Eng 2. Latin. 3 Physics. 4. Chemistry. 5. Either French or German. 6. Algebra, Plane Geometry or Botany.

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PAGE

ORIGINAL ARTICLES.

The Post-Mortem Signs of Drowning. *By G. DeN. Hough, M.D.*, New Bedford, Mass. 409

A Case of Criminal Abortion with Peculiar Features. *By W. S. Birge, M.D.*, Provincetown, Mass. 412

Carcinoma of the Cardiac End of the Stomach. *By Albert N. Blodgett, M.D.*, Boston. (Concluded.) 414

Remarks on the Operative Treatment of Strictures of the Deep Urethra. *By Paul Thorndike, M.D* 417

REPORTS OF SOCIETIES.

The American Association of Genito-Urinary Surgeons. Ninth Annual Meeting, Niagara Falls, May 28 and 29, 1895. (Concluded) 418

First Day. (Concluded.) — Iodoform Ointment Injections in the Treatment of Suppurative Adenitis of the Groin.—The Infiltration Method of Local Anesthesia in Genito-Urinary Surgery.—Remarks on the Seminal Vesicles.—Three Cases of Epithelioma of the Penis.

Second Day. — A Tabulated Report of 27 Operations for Prostatomyomectomy by the Suprapubic Route, with Remarks.—Six Successful and Successive Cases of Prostatectomy.—A Case of Complete Castration for Prostatic Overgrowth: Observation for Four Months.—The Results of Treatment of Hypertrophy of the Prostate.—A Case of Early Obstruction of the Ejaculatory Ducts.—The Operative Treatment of Strictures of the Deep Urethra.—A Case of Cancer of the Urethra.—New Instruments.—Traumatic Rupture of the Urethra; Restoration after Thirty-six Years.

Massachusetts Medico-Legal Society. *F. W. Draper, M.D.*, Secretary 423

The Post-Mortem Signs of Drowning.—A Case of Criminal Abortion with Peculiar Features.—An Unusual Cranial Fracture.

EDITORIALS.

Total Extirpation of the Epiglottis by Sub-Hyoidean Pharyngotomy 426

Medical Notes 426

A "Syphilidological Congress."—The British Medical Association.—The Pasteur Institute.—In Memory of Pasteur.—A Helmholtz Tablet.—The Graefe Medal.—Professor Adamkiewicz Honored.—The Grace Testimonial.—The American Public Health Association.—A Death from Anthrax.—A New Laboratory for the University of Minnestoa.—Appointments at Johns Hopkins University.—The "Index Medicus."—"Climate and Health."—Over-exertion Fatal to both Physician and Patient.—"Toxines Attack Tumors."—A Medical Hero.

New England.

Acute Infectious Diseases in Boston.—A Bequest to the Massachusetts General Hospital.—Typhoid Fever in Connecticut.

New York.

A Supernumerary Kidney.—The University of the City of New York.—Diphtheria in Hudson City.—The Law Relating to Suicides.—Death of a Surgeon of the Civil War.—The Serum Treatment of Tuberculosis.—A Small Mortality from Diphtheria.—The Antitoxin of Diphtheria and the Death-Rate of New York City.

Philadelphia.

Prof. J. M. DaCosta.—Reception to Dr. W. H. Welch.—Death of Dr. James Collins.—Doings of the Medical Societies.

CORRESPONDENCE.

Cork Pavement. *A. H. N.*, Boston 43

MISCELLANY.

The Recent Evolution of Surgery 42

Tuberculin *vs.* the Microscope in Iowa 42

The American Electro-Therapeutic Association 43

Therapeutic Notes 43

Record of Mortality, October 12, 1895 43

Meteorological Record, October 12, 1895 43

Army, Navy and Marine-Hospital Services 43

Society Notice 43

Harvard Medical School. Evening Lectures 43

Appointments 43

Books and Pamphlets Received 43

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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Original Articles.

THE POST-MORTEM SIGNS OF DROWNING.[1]

BY G. DE N. HOUGH, M.D., NEW BEDFORD, MASS.

Drowning is death in consequence of cutting off the access of air to the respiratory passages by any fluid.

Only enough to cover the nostrils and mouth is needed. I found a case reported where a drunken man was drowned in the water contained in the print of a horse's hoof in the mud, and many cases are known of persons being drowned in a gutter or brooklet where the water was not deep enough to cover the ears of a person lying on his face.

By no means all who die in consequence of falling into the water are drowned. Some persons are removed from the water alive, and die after a time from such things as: spasm of the glottis, pneumonia (due to the injury sustained by the lungs from the water that has penetrated them), cholera (a case reported in England of a boy submerged in infected water), or suddenly without apparent cause (supposed to be due to the arrest of interstitial nutrition during the time respiration was suspended). We have, besides these, a certain number of cases in which the death may be due to shock, syncope, paralysis of the heart, tetanic spasm of voluntary muscles and perhaps of the heart itself, inhibition of respiratory movements, cerebral hemorrhage, congestion or concussion, or an epileptic seizure. Such cases cannot be considered as cases of drowning, properly speaking; and while their study is of extreme interest, I must at present pass them over for lack of time.

It must be remembered, however, that often one or more of these disturbances play an accessory part in cases of true drowning; and it is to them, in fresh bodies, that the principal difficulties of the post-mortem diagnosis of drowning are due. The part that they play was formerly considered much more important than at present. The more recent investigators find that by far the largest part of the cases of death in the water are due to asphyxia; and the rôle of syncope, cerebral congestion, neuro-paralysis, etc., seems to be growing less and less important. For example, Dr. S. Coull Mackenzie[2] reports 305 cases of drowning: of these, six were so far advanced in putrefaction that the cause of death could not be determined. Of the 299 remaining, one died of syncope, one of apoplexy and asphyxia, 297 of asphyxia. Other recent writers estimate the proportion of deaths from pure asphyxia at from 80 to 90 per cent. In 50 cases, I have seen but one due to anything but asphyxia. This was a man with mitral valvular disease; no signs of asphyxia were present. I presumed that he died of syncope or sudden paralysis of the heart. In true drowning the cause of death is asphyxia.

When a body is found in the water it is natural to infer that death was caused by drowning. This may, however, be an error; and it is our duty to find positive proofs of the mode of death if such proofs really exist.

There is no pathognomonic sign of drowning; yet in most cases the diagnosis is possible, provided the examination be made before putrefaction is too far advanced.

It is impossible to set any exact limit in time for this obliteration of signs but, roughly, it requires about fifteen or twenty days in winter and from three to eight days in summer. The character of the liquid medium, the presence or absence of currents, the richness of the medium in those bacteria that liquify gelatine and albuminous substances, all affect the rapidity of putrefaction, and hence the varying length of time during which the signs will persist. Of course, the principal element (as is shown by the figures just given) is the temperature.

I wish to make a special point of the necessity of making our examinations in these cases as soon as possible after the body is taken from the water. Once out of the water putrefaction advances with tremendous speed, and in warm weather a couple of hours will sometimes suffice to render our autopsy worthless.

The special signs of drowning will be less marked the more largely the concomitant or accessory causes of death enter into the case, so that in a large series of cases we find all grades of development of these signs. Again, the signs will vary somewhat according to the rapidity of the death and the number of times the person rose to the surface. If our autopsy for any reason yields negative results, it is well to set forth in our report the reasons therefor, and especially to state that in spite of the absence of characteristic signs of drowning the person may have come to his death in consequence of falling into the water.

In examining a drowned body there are three sets of phenomena that attract our attention: (1) those due merely to the body's lying in the water; (2) those met with in asphyxia from any cause; (3) those found specially in the drowned.

Our conclusion is based on a considerable number of facts. No one of these facts is of itself sufficient. All taken together make the correctness of our conclusion almost positive.

External Examination. — Rigor mortis is of value only in determining the time that has elapsed since death. Parts are involved in the same order as after other modes of death. It usually sets in early because the body cools rapidly, and as in other violent deaths may be instantaneous. Its duration depends partly, at least, upon the temperature to which the body is exposed both before and after removal from the water. The higher the temperature the more rapidly it disappears. Barlerin observed it beginning in the lower jaw after only two or three hours; Belohradsky found it complete and strong in one case after nineteen hours; Dsirne observed it still existing once after six and once after seven days.

Suggillations are found, as usual, on the most dependent parts, which, in floating bodies, are usually the head and thorax. They are probably not formed prior to four hours after death, and reach their maximum in twelve to fifteen hours. Their abundance depends on the amount and fluidity of the blood. From their situation we may infer the attitude in which the body cooled. Their color is often bright red or rosy-red. This color depends in part upon the effect on the blood of the oxygen dissolved in the water which soaks into the skin, in part upon the fluid condition of the blood, and in part upon the effect of cold upon the body. Such spots were observed by Dsirne abundantly in a case which came to autopsy twelve hours after death, and in small number in a case seven days after death. They were present in 40 out of 48 cases that were not too putrefied to show them. Similar spots are seen after poisoning by prussic acid, by charcoal-gas, by illuminating-gas, and in any body whose blood is fluid if it lies long enough in the water.

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[1] Read at the Annual Meeting of the Massachusetts Medico-Legal Society, June 11, 1895.

[2] Medico-legal Experience in Calcutta. Edin., 1891.

As far as my reading has extended, all authors (save two) agree that the course of putrefaction in bodies that are floating in water differs in a characteristic manner from that in other bodies. This characteristic difference consists in the fact that, while in other bodies putrefactive change first shows itself on the abdomen and progresses both toward the head and toward the feet, in water bodies it begins at the head and progresses gradually toward the lower extremities. The abdomen, indeed, shows the changes so much later than the head and neck, that, if a water body be divided into two parts by a transverse incision at about the level of the second lumbar vertebra and the two parts be viewed separately, one could hardly convince himself that they were derived from the same body. According to Belohradsky and Kornfeld, this peculiar progression is not constant. The case mentioned by Harris was not a body that putrefied while floating. Kornfield says that the changes of putrefaction often follow this same order in cases of death from heart disease. In consequence of putrefaction there is in water bodies a tremendous development of gas in the subcutaneous connective tissue. We do not find this to the same degree in other bodies, except perhaps in cases of emphysematous gangrene of rattlesnake bites.

There is nothing peculiar about the pallor of a drowned body. As Casper says, preconceived notions and the personal equation enter prominently into this question. Rosy patches, due to injection of the vessels, are often seen on the inner surfaces of the thighs and anterior part of the chest of fresh bodies. They are due to the effect of cold. If a body presenting such patches be put in a refrigerator, they become generalized. The same color is often seen on a body immersed post-mortem and then put in a refrigerator. Tourraine and Bédié saw the same red color appear suddenly on the thorax, abdomen and back of some soldiers bathing in cold water.

The skin of any water body will be saturated with water. When on the autopsy table, the rapid evaporation of this water may cause the skin to feel comparatively cold when one touches it. This is not an important sign, and its appreciation, like that of the pallor of the drowned, depends largely on "preconceived ideas and the personal equation."

Cutis Anserina. — Leaving out of consideration young children, in whom it is uncommon, and new-born infants, in whom it never occurs, cutis anserina is almost always present in drowned bodies unless they have been so long in the water that the epidermis has become separated. Usually, it is recognizable for from eight to eleven days after death. It is usually best marked on the anterior surfaces of the extremities, and is most distinct in very hairy persons. It depends partly upon mental shock, and partly upon the sudden plunge into a cold medium. Anatomically it is caused by contraction of the arrectores pili, their relaxation being prevented by rigor mortis. It occurs not only after drowning but also after all sorts of violent deaths, and sometimes during life, and can be produced on a dead body by throwing it, while still warm, into cold water. A condition of skin not distinguishable from this is said by Casper to be very common among the lower classes in Berlin, as a permanent appearance.

Retraction of the penis, scrotum and nipple are phenomena, which like cutis anserina, are produced by contraction of certain smooth muscle-fibres of the skin and subcutaneous connective tissue, the contraction being caused by mental shock or by the sudden effect of the plunge into cold water. They are very common but not invariable signs, and, of course, disappear as the gases of putrefaction develop in the subcutaneous tissue.

Condition of the Epidermis.— The epidermis of any body that lies in the water undergoes certain changes from imbibition; it first becomes whitish and opaque, then swollen and wrinkled, and then gradually separates from the true skin. This process occurs earliest where the epidermis is thickest, and hence, first of all, on the soles of the feet, if they are naked; otherwise, first on the palms of the hands. These parts show distinct change usually in six or eight hours. Dsirne observed distinct bleaching and wrinkling in two hours and in four hours; he found it absent in one case after six hours, in two cases after twenty-four hours, and in one case after eleven days. Next after the hands and feet these changes are usually noticeable at the knees and elbows. In a month the epidermis is almost entirely detached.

The whitish, opaque, swollen and wrinkled appearance of the hands and feet may be produced by prolonged soaking during life, and in the case of the feet may be due to profuse perspiration. One observer alleges that if a body is put into water after death the mode of separation of the epidermis on the hands and feet is not like that seen in the bodies of the drowned. He says that in the former the epidermis becomes cracked and fissured, and rises up in little shreds, while in the drowned it wrinkles longitudinally and separates almost in a single piece like a glove. These observations lack confirmation.

The bluish, livid color of the underlying tissues showing through the more or less macerated epidermis gives to the hands an appearance strikingly different from that of the rest of the body (except the feet). Hands in this condition are often spoken of as "cholera hands," from their resemblance to those of persons in the cyanotic stage of cholera.

The hair comes off pretty easily after about eight days. That of the head and pubes commonly comes out, roots and all, while the down of the body and all young strong hairs break off at the surface of the epidermis or in the follicles.

The nails become blue or yellowish-red, and are loosened in from seven to fifteen days. They generally fall off (sometimes the epidermis comes off *en masse*, carrying with it the nails) in two or three months.

The eyelids of fresh bodies are usually half open. They become swollen as putrefaction advances, and finally by this change are entirely closed. Sometimes, in children, there are ecchymoses on the lids. The globe of the eye, if the body is fresh, looks like that of a live person, brilliant, smooth and clear. This is what is meant by those authors who speak of the fish-like expression of the eyes of the drowned.

The conjunctivæ are at first usually pale-reddish, with more or less injection in the culs-de-sac; later, corresponding to the cyanosis of the head, they become dark-red, livid, or violet. Ecchymoses of the conjunctiva occur but rarely in adults, much more commonly in children; they are particularly common, according to Hofmann, in those who are drowned in thick fluids.

The sclerotic is more or less edematous, especially at its inferior part if the body has not been long in the water.

On that part of the cornea not covered by the eyelids there may, in fresh bodies, be seen several (twelve to fifteen) gray phlyctenular elevations of the size of a poppy-seed. These elevations disappear after a time, and this part of the cornea looks bright, and is deprived of its epithelium. That part of the cornea that was covered by the lids is cloudy throughout its whole extent, and its epithelial covering somewhat swollen. These peculiarities of the cornea were observed in every one of twelve fresh bodies of strong young persons drowned while bathing. The observations were made in summer. The author says the changes develop more slowly in winter (Seydel, 1890). Dsirne observed the cloudy condition of the cornea nine times; three times in summer, twice in each other season. It was developed in one case in four hours. Dsirne did not observe the phlyctenulæ.

The pupils are usually dilated, often very unusual. Their diameter is commonly from six to eight millimetres. The iris is often more or less reddish, so that the eye resembles that of an albino.

On the dorsal surface of the nose, there are often erosions due to rubbing against the bottom. This is especially common in men, because, owing to the mode of distribution of their adipose tissue, men usually float face downward, while women float face upward. In the women, therefore, we more frequently than in men find foreign substances and effusions of blood or bloody liquid in the nostrils.

At the nostrils and at the mouth we often find a mass of froth. This is of the same character as that found in the air-passages, from which indeed this comes. It is made up of very small bubbles, is whitish or rosy-red at first, becoming later, in consequence of putrefaction, reddish or brownish. Dr. Draper has well characterized its appearance as like the lather produced by shaving soap. It is not commonly found after a body has been three or four days in the water, and disappears rapidly after removal of the body from the water. It is present in only about 15 to 20 per cent. of the cases of drowning. Sometimes, when not present, it will appear if pressure is made upon the chest. The presence of this froth is of great importance; for it is the only external sign that can be considered of much value from a diagnostic standpoint. True, it is not a pathognomonic sign; nevertheless, we will seldom make an error if we take it for granted that a body, taken from the water, and presenting a mass of fine bubbled, white or rosy froth at the mouth and nostrils, is that of a person who came to his death by drowning.

The lips in recent cases are bluish or cyanosed, and may present erosions or ecchymoses or traces of having been bitten. From putrefaction, they become after a time enormously swollen, blackish and separated, showing the teeth and tongue. At the lips we often find the same froth as at the nostrils. Sometimes it occurs at the lips and not at the nostrils. Foreign substances are sometimes to be observed on the lips or within the mouth.

The position of the tongue is, to be sure, of no diagnostic value, still it is more commonly somewhat pushed forward, and in a certain proportion of cases is between the teeth, by which it may have been indented, contused, or lacerated, and then it is often swollen. The base of the tongue may show a vascular injection, which may be limited to the tongue or may extend also to the epiglottis.

The Hands.— Excoriations or abrasions of the dorsal surfaces and ends of the fingers have been mentioned by nearly every one who has written on drowning since the time of Ambroise Paré. They have been supposed to indicate a struggle for life, and to be due to rubbing on the bottom during this struggle. Many observers of wide experience have rarely, if ever, met with them. They may, if present, have been produced before immersion, and what looks like excoriations may be merely elevations of the macerated epidermis from the action of the water. Fragments of weeds or other substances are occasionally found clutched in the hands. If the substance or object is peculiar to the water, and especially to the water that is found in the lungs and stomach, this is a sign of great importance both as to the fact of drowning and possibly also as to the locality where drowning took place. Sand, gravel, mud or fragments of plants may be found under the nails. Inasmuch as they may be deposited there after death and may get there during the pulling of the body out of the water, their presence is not of much importance, even if the character of the minute shells, diatoms, etc., contained in them enables us to demonstrate their place of origin.

If, in the body of a very young infant that has been found in the water or in any other liquid, the umbilical cord is mummified, we know that three or four days must have elapsed between the birth and the time the body went into the water. Hence the probability is that the child was not drowned, for it is difficult to believe that a person intending to murder a child would keep it three or four days alive.

In very many cases the fluid in which a person is drowned penetrates the middle ear through the Eustachian tube. The value of the presence of liquid in the middle ear as a sign of drowning depends, of course, largely upon the possibility of its getting there after death. Certain experiments seem to show that in about one case in four, this post-mortem penetration may take place. The question can hardly be considered settled up to the present time.

The best technique for the necessary examination is as follows: Thoroughly cleanse and dry the meatus auditorius externus. Assure yourself by examination with an ear speculum in a good light that the tympanic membrane is intact. Puncture the membrane with a small pipette or hypodermic syringe and remove by aspiration any fluid that may be present in the middle ear. In certain diseased conditions and at certain stages of putrefaction there may be liquid in the middle ear. In order, therefore, to make the most of this sign, it is desirable to identify the liquid withdrawn with that in which drowning took place.

Losses of Substance.— Occasionally the soft parts are more or less extensively eroded by the action of the water, or eaten away by fish or water-animals. Erosion is more apt to occur in parts that were the seats of contusions or lacerations before death; in contradistinction to the marks produced by animals the edges of erosions are softened and poorly defined.

Presence of Vernix Caseosa.— The vernix caseosa is not removed from the body of a child by the action of quiet water in six weeks. Belohradsky, to whom this observation is due, suggests that if the temperature of the water is high and the current strong, it would very likely come off sooner.

We now pass from the external appearances to those presented by the internal organs:

The brain and its membranes are more commonly anemic than congested. Hypostasis may be mistaken for congestion, and the large amount of blood that (on account of its fluidity) flows from the severed sinuses may similarly deceive us. Congestion is said to be commonest in those who go into the water intoxicated.

I have met with no observations as to the condition of the spinal cord or its membranes after drowning.

On reflecting the skin and muscles from the chest and neck, in the manner usual at an autopsy, Paltauf has several times observed bilateral lacerations of portions of the sterno-cleido mastoidei or of the pectorales majores, with extravasation of blood between the separated ends of the fibres. He considers these due to violent efforts during drowning, or to the rough application of Sylvester's method of artificial respiration, and not at all due to violence by another.

The mucous membrane of the pharynx is sometimes injected or ecchymosed.

The position of the epiglottis is of no importance. Its mucous membrane is occasionally injected, rarely ecchymosed. If the body does not lie long exposed to the air, we will often find the aryepiglottic folds swollen by imbibition of water. At first sight it reminds one of edema from inflammatory disease. The larynx itself may contain froth or foreign substances (mud, bits of water-plants, vomitus, etc.), and its mucous membrane may be congested or even ecchymosed.

Before removing the sternum we may be impressed with the protrusion of the intercostal muscles between the ribs, as in cases of pneumo-thorax. This is due to the increased volume of the lungs, which will be considered later.

Pleuritic adhesions exercise an important effect upon the condition of the lung tissue underlying them.

The presence in the pleural cavities of watery liquid, stained more or less with blood-coloring matter, seems to me of much importance in some cases. To be of any diagnostic value pleurisy must be excluded and putrefaction must be not very far advanced. The amount of this watery fluid is inversely proportional to the amount of moisture in the lungs. I have seen over a quart in each pleural cavity of a body which lay under the ice for a week. The lungs in this case were decidedly dry. Putrefaction had not advanced enough to float the body, to cause the least odor when the body was opened, or any discoloration of the head or face. Authorities differ as to the significance of this fluid, some believing that just as much will transude in cases of death from heart disease with pulmonary edema, or in cases of considerable pulmonary congestion, as after drowning. One would naturally suppose that chemical analysis of the liquid would easily distinguish between transuded drowning fluid and the liquids that might be found in the pleural cavity in the other conditions mentioned.

If in opening the chest any blood-vessels are wounded, the blood (which in drowned bodies is very liquid) is liable to flow into the pleural cavities in considerable quantity. As much as possible this must be prevented.

The pericardium often contains a small amount of liquid. Subpericardial ecchymoses are of great rarity in the drowned; at all events, unless the drowning fluid be of such a density that the person is rather suffocated than drowned. Pericardial adhesions, by interfering with the action of the heart, may favor rapid death in cases of drowning.

Examination of the coronary arteries and cardiac muscle may account for absence of signs of drowning in bodies taken from the water. Degeneration of the heart muscle (usually dependent upon disease of the coronary arteries) will, of course, render the person more liable to death from syncope or shock if he falls suddenly into the water. From the same standpoint, disease of the valves of the heart is important.

(To be continued.)

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A CASE OF CRIMINAL ABORTION WITH PECULIAR FEATURES.[1]

BY W. S. BIRGE, M.D., PROVINCETOWN, MASS.

The paper that I am going to present to you to-day is not a literary article, but simply the history of what has been to me a very interesting case — a case of criminal abortion presenting some peculiar features.

By abortion is commonly understood in medicine the expulsion of the contents of the uterus before the sixth month of pregnancy; between the sixth and ninth months the woman is said to have had premature labor. The law makes no distinction of this kind, but the term abortion is applied to the expulsion of the fetus at any period of pregnancy. Criminal abortion, according to most authorities, is rarely attempted before the third month; it is perhaps most common between the fourth and fifth months, for it is not until such a time that the woman is positive in regard to her pregnancy; after the sixth or seventh month it is again rare for a criminal operation to be performed. In the case I am about to relate, it is supposed that a criminal operation was done at or about the eighth month of pregnancy.

On the morning of April 26, 1894, a laborer passing by what is known as the Mill Pond in the village of W——, saw the body of an infant child floating on the surface of the water. He at once notified his employer, who was deputy sheriff and also undertaker; the remains were removed to his office, and I was notified.

On viewing the body, the following facts were presented: It was that of a male child of fairly good size, but with the appearance of having been born at or about the eighth month; the skin was well filled out; the length of the body was fifteen inches; the nails were firm, but not reaching to finger-tips; the membranæ papillares had disappeared; the hair was well developed; the skin was of a greenish color in places showing that putrefaction had commenced. Attached to the child was a piece of the umbilical cord, some eleven inches in length, which had the appearance of having been forcibly torn apart.

An autopsy being deemed necessary, the proper authority was obtained and a full examination was made.

On opening the thorax, the lungs were first examined; crepitation was obtained upon pressure and they were found to be fully inflated, markedly so, for every portion showed great buoyancy when submitted to the hydrostatic test. They were not inflated with gas caused by putrefaction, for they were in a very good state of preservation. My experience has been that the lungs are slower than other organs of the body in undergoing putrefactive changes. The heart, lungs, and in fact all the organs, were almost entirely bloodless; the foramen ovale was partially closed. Meconium was found in small amount in the large intestine. One testicle had descended into the scrotum, the other was in the inguinal canal. The abdominal cavity was somewhat distended with gas.

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[1] Read at the annual meeting of the Massachusetts Medico-Legal Society, June 11, 1895.

From the foregoing we arrive at these conclusions:

(1) The child was born alive and must have lived some little time, for the lungs to have been so thoroughly inflated.

(2) From the bloodless appearance of the body hemorrhage must have ensued from the cord sufficient to cause death, although contrary to the general rule, and what we might expect when the cord was forcibly ruptured or torn apart at such a distance from the child's abdomen.

In a house, the yard of which bordered on the pond where the child's body was found, lived a young woman of eighteen with her parents. She moved in a society rather superior to that occupied by them, although they were eminently respectable people. A short time previous a rumor was in circulation that the girl was pregnant. She was keeping the company of a young man in an adjoining town. As they were frequently seen together, this tended to strengthen the impression. A fortnight before finding the body she had been confined to the house for nearly a week with a severe cold, so her mother informed a neighbor; however, she was soon out again apparently as well as ever, although some ventured the remark that her shape had changed. As I say, this was only a vague rumor, and had only excited slight comment; and if the finding of the body had not turned our attention directly to it, it would have been forgotten.

Before concluding my report, I visited the house in company with the deputy sheriff. The family consisted of the father, mother, three small children, the young lady in question and an old grandmother. Upon being interviewed, the young girl, who was very much frightened, burst into tears and told the following story:

She had been keeping company with a young man for some time, and had had illicit intercourse with him quite frequently, as she had also with two or three other male friends; finally, through her indiscretion, she became pregnant. She tried to prevail upon this particular young man to marry her, but he kept putting her off from time to time until, finally, he refused to marry her, but said he would take her where she could have an abortion performed and so get out of the trouble that way.

Fifteen days previous to the autopsy she went with him to the office of a physician in a neighboring town who, she said, had agreed to perform the operation for twenty-five dollars.

Her companion remained in the waiting-room while she retired with the doctor to his private office, where she remained nearly an hour; during which time he made an examination of her person, using various things which she did not understand the use of and could not describe, as she did not see them; finally, he passed something into the vagina which he told her was a boro-glyceride suppository; and to retain it in position, he put up a tampon of cotton which she was to remove by means of the attached string, at the end of the twenty-four hours. He also gave her three vials; one contained tablets to be taken one after each meal; another, a liquid, of which she was to take ten drops in water between meals and at bedtime; the third, tablets to be dissolved in water and used for an injection. The following evening, not experiencing any effect from the treatment received or the medicine taken, in company with her young man she again visited the doctor's office; this time the young man had some words with the doctor in regard to paying the bill; the latter became very angry, swore at them and ordered them to leave his office.

The next day she returned to her home, and the day after was taken with severe pains in the back and bowels, with flowing. She always suffered pain at her monthly periods, and told her mother and grandmother that she was unwell. She occupied a lounge in the sitting-room the greater part of the day, and the old grandmother put hot plates to her bowels, gave her "pain-killer" and hot drinks, hoping to relieve her. Just before tea-time she arose, went to her room and lay down on the bed. In about half an hour, while the family were at tea, she gave birth to a child, the placenta soon following. Getting up, she rolled up the child and afterbirth in an old petticoat and secreted them under the bed, where they remained until the next evening.

The following day, she arose at noon and dressed herself; that evening, when she could do so unobserved, she took the child, together with the afterbirth and some soiled clothing, out into the orchard and buried the same in a hole in the ground. Two days later, hearing her father speak of plowing up the orchard, and fearing that he would discover the child, she went that night and dug up the remains, and putting them into a six-quart pail with some stones on top, carried them to the pond and threw them in.

The girl said that no one in the house was aware of her condition, and that none of her family, not even the old grandmother, knew or suspected that she had given birth to a child.

Cases of concealed birth are not a great rarity, but they usually occur under different circumstances. It does seem somewhat improbable that a young girl could become pregnant, go to the eighth month, and then be taken sick and give birth to a child, with mother and grandmother (the latter a midwife for years) in an adjoining room and they not know of it; and then, allowing that such a thing could occur, to still further carry out the deception by secreting the product of her conception in her room for twenty-four hours or more; then to bury the same; and, finally, two nights later, to dig it up and consign it to a watery grave — all this seems almost incredible.

The mother seemed positively amazed when confronted with the facts, but stoutly denied any previous knowledge of the case; the old grandmother likewise professed her ignorance; and as the girl's story confirmed theirs, there seemed to be no other alternative than to accept it as true until something further developed to give a different tone to the picture.

At the hearing, held a few days later, the girl told the same straightforward story without varying a particle. Her young man, although previously denying all knowledge of the affair, on being put upon the stand confessed the whole. His story in regard to visiting the doctor's office agreed with hers perfectly. The amount of money he promised to pay the doctor was twenty-five dollars. At the first visit he paid two dollars; on the following evening when they called, he offered the doctor half the amount promised, and agreed to pay him the remainder when a satisfactory result was obtained. This incensed the doctor very much, he demanding the whole. One word led to another, until finally he ordered them both from the office. The doctor, on being sworn, said that the couple came to his office as stated; that nothing was said about an abortion; that he made a vaginal examination, found a very filthy condition, profuse leucorrheal discharge, pruritus of vulva and anus, aggravated by a multitude of seat-worms. He said he did not know at that time that she was pregnant. He washed out the vagina, put in a boro-glyceride suppository followed by a tampon of absorbent cotton to hold it in place. He gave her a vial of permanganate of potash tablets to use in an injection once a day, a vial of Wyeth's tablets of iron, arsenic and strychnia, to take one after meals; and a vial of homeopathic tincture of nux vomica to take ten drops in water, between meals. He said he asked and received two dollars for treatment and medicine.

The second time they came, he was asked to perform an abortion, some talk was had in reference to it, the young man offering him twenty-five dollars in cash, which he refused. They had some words over it, both giving vent to their feelings; he finally ordered them from his office. He had nothing to do with performing an abortion, and did not know except from their own story that she was in the family way.

At the conclusion of the hearing the court, deeming the evidence sufficient, bound the doctor over to the grand jury in the sum of five thousand dollars, on the charge of criminal abortion. The young man, as accessory before the act, was bound over in the same amount. The young lady, as she had turned State's evidence, was allowed to go on her own recognizance, no charge at that time being preferred against her.

I cite this case as one of more than usual interest. It is very seldom that even the professional abortionist will perform an operation upon a woman at such an advanced period of pregnancy as in this case. The young woman, it would seem, could have no object in evading the truth in regard to the circumstances attending her confinement, unless it was to shield the mother or grandmother, who might have aided her at that time or afterwards have disposed of the child. She said she supposed the child was dead when born as it never made any out-cry or noise of any kind.

The physician was indicted by the grand jury for the crime of inducing an abortion, the young man as accessory before the act; the young woman went on her own recognizance. If she had also been indicted, the question would have undoubtedly arisen later, Was she guilty of infanticide or simply of concealment of a birth? The common law holds that a woman is not legally responsible for an omission causing the death of her child when she is alone and has no one to assist her in or during her confinement; but in this case, in submitting to a criminal operation, she signified her consent to the destruction of her unborn child, and at the time of birth she could easily have had the assistance needed by calling the mother or grandmother from the adjoining room or summoning one of the two physicians who were within five minutes' walk of the house.

In the discussion which follows the reading of this article I trust it will be strongly urged that a more determined action be taken by all regularly-registered physicians and especially by the medical examiners of the Commonwealth, to bring to justice these so-called physicians who are engaged in this nefarious business.

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CARCINOMA OF THE CARDIAC END OF THE STOMACH.

BY ALBERT N. BLODGETT, M.D., BOSTON.

(Concluded from No. 16, p. 392.)

THE diagnosis of cancer of the cardiac orifice of the stomach or its immediate vicinity may present certain difficulties which do not so obscure the determination of cancer in other and more common locations in this viscus. The situation of the cardiac end of the stomach is, under ordinary circumstances, partially or entirely beneath the overhanging border of the ribs, and the tension of the upper abdominal wall would generally tend to render the exact determination of position of any pathological process in this region more or less uncertain. The anatomical relations of the various parts in the immediate vicinity of this end of the stomach is so intricate, that the differentiation of the organs may not be always easy. The contiguity of the cardiac end of the stomach, or of the lower end of the esophagus with structures important to life — such as the pneumogastric nerve, the aorta, the pancreas, spleen, the sympathetic nerve, and to a less degree with the solar plexus — would, no doubt, often make it difficult or perhaps impossible to define the nature or extent of the disease, the symptoms of which might direct attention to the invaded structures more than to the seat of the original disease. The diagnosis would be strengthened by the possibility of exclusion of any affection of the neighboring organs or structures, and the elimination of other conditions of the stomach which necessarily pass under review in the study of so rare a disease as the one under consideration. There would probably be more or less hardening of the deeper tissues, in most cases, with at times a well-defined tumor in the region of the cardia, which could not be accounted for by the implication of any other organ in the abdomen. Should the disease extend upward so as to embrace the esophagus to a greater or less degree in the process, there would be, in addition to the symptoms of the stomach, those of implication of this tube, consisting of more or less constriction of its calibre, with the resulting interference with swallowing. The location of these could be probably established by the use of the esophageal tube on which the distance from the incisor teeth to the constriction could be ascertained, and the location of the upper border of the constriction be thus determined. Other causes of interference with swallowing might relate to some disease of the neighboring parts, such as aneurism of the thoracic aorta, which would probably be indicated by sufficiently evident signs peculiar to this lesion. Malignant disease, or inflammatory conditions of the anterior or posterior mediastinum, or its contained glands, tuberculosis, enlargement or malposition of the heart, the existence of effusion or other pathological product in either chest cavity or the pericardium, would also deserve consideration.

The diagnosis between carcinoma of the stomach and ulcer of the stomach may be sometimes a matter of doubt for a time, but the progress of the two maladies is so diverse that a distinction would soon be possible in most cases. The possible relation of cancer of the stomach to ulcer of this organ has often been suspected, but has not yet been satisfactorily proved; but the relation of ulcer of the stomach and cancer of the cardia may well be doubted, and a confusion between the two diseases in this location would appear impossible.

In cardiac cancer, vomiting is apt to occur very soon after taking food. If the food is unchanged in character and of alkaline reaction, it has never entered the stomach at all. Dysphagia is often also present.

Vomiting and other symptoms of stenosis may disappear through breaking down of a tumor and the removal of obstructing masses. The cardia is not accessible to palpation, as it is under the margin of the ribs, and also beneath the left lobe of the liver. Tumors of the cardia cannot be detected at all, and many others only when very large, or when there is displacement of the surface affected, or malposition of the entire organ. Tumors of the pylorus often transmit the pulsations of the aorta. Cancer of the stomach may also be simulated by hard fecal masses in the colon. In one case seen by the writer a dense mass of firm tissue was detected extending from the margin of the ribs to the region of the cardiac orifice of the stomach, which resembled an enlargement of the cardiac end of this viscus, but was later found to be the end of a sinus which had extended from the border of the left scapula downward around the chest, and had penetrated the abdominal cavity, where it had become attached to and had perforated the wall of the transverse colon, thus forming a channel from a large abcess beneath the scapula, the contents of which were discharged from the rectum.

Osler (page 377) states that cancer of the cardia may be associated with wasting of the organ and reduction of its size. The esophagus above the obstruction may be greatly dilated. Perforation may occur into the colon, small bowel, pleura, lung or pericardium. Edema and anasarca may occur as a result of the anemia due to cachexia. In one case reported by Osler, a portion of the left lobe of the liver was found in the stomach, having entered that viscus through a large perforation of the gastric wall, from cancerous ulceration near the cardia.

Hilton Fagge, in his work (Vol 1, page 316), states that, "cancer of the cardia is not always detected by the most careful examination during the early stages of the disease." In a case under his care "the primary stricture was latent, and the first symptoms were those of paraplegia, caused by secondary development of cancer in the vertebræ. . . . The cases which are reported as cancer of the esophagus are often not correctly described; the disease is very rare, and its detection not easy. Moreover, in every one of the four or five cases that have at different times been recorded under the name of 'cancer of the cardia,' in the reports of post-mortem examinations during twenty years, there is room for supposing that the disease began either in the esophagus or in the lesser curvature of the stomach."

RELATIVE FREQUENCY.

Prof. W. H. Welch believes that from the recorded statistics the location of the several varieties of cancer of the stomach is about as follows: At the pylorus, 60.8 per cent.; at the lesser curvature, 11.4 per cent.; at the cardia, 8 per cent.; on the posterior wall, 6.2 per cent.; in the whole or greater part of the stomach, 4.7 per cent.; multiple, 3.5 per cent.; greater curvature, 2.6 per cent.; anterior wall, 2.3 per cent.; in the fundus, 1.5 per cent. Out of 55 cases of cancer of the stomach reported by Prof. William Pepper the disease was seated at the cardiac orifice eight times, or 14.5 per cent. Ewald gives the ratio as 10.11 per cent., and Luton as 7.87 per cent.

PATHOLOGY.

The pathology of carcinoma of the cardia is the same as that of other varieties of this disease, that is, it consists of an inordinate development of the epithelial structures of the part in which it is located, or of that of some epithelial surface from which the diseased tissues have been brought to the part affected in the way of metastasis, or by contiguity, or other means. The history of the disease in its primary or subsequent location is essentially the same, and is comprised in the inordinate development of the epithelial cells, which soon exceeds the natural boundaries of this tissue; and instead of only covering the surface, it dips in large masses into the deeper tissues and forms nodules or lumps of epithelial cells, supported by connective tissue in greater or less amount as a stroma. At times the amount of connective tissue is so large that the cancerous nodule is dense and firm, and in some cases it would seem that the connective tissue by its power of contraction may so compress and strangle the proliferated cells, that they may necrose and be rendered harmless for many years, or during the life of the patient. I have seen cases in which I think this may have occurred.

The most common form of gastric carcinoma is one in which there is a massive development of epithelial cells, so that in some cases the connective tissue may be only preserved in the form of a reticulum, or stroma of attenuated form. This may be quite vascular, and thus the entire growth be soft, moist, and easily inclined to bleed. There is also an early tendency to ulceration of the diseased structures, which soon present a more or less deep excavation at the seat of the disease. This does not tend to heal, but constantly extends. The increased hyperplasia of the epithelium is followed by necrosis of the new-formed tissue.

In cylindrical structures the calibre of the organ affected may be seriously diminished by the proliferation of the growth into its lumen, and at times the patency of the canal may be entirely obliterated by the disease, or a stricture of the tube may occur from the circular extension of the cancerous hyperplasia. This is what is thought to have occurred in the case reported in this paper, in which complete closure of the passage from the esophagus into the stomach was produced by the growth, but in which after an interval of a few days fluids, and later soft solids, could be again swallowed.

The above feature in the progress of this case was one of the most interesting facts in the phenomena of the disease. If the correctness of the statement concerning closure of the cardiac orifice of the stomach be questioned, it can only be stated that the most careful examination was made both by Dr. Lovett and the writer, upon this point. Of the increasing resistance, and the larger size of the growth at the time of the previous visit there can be no question; and the power of swallowing was then suspended; but after about forty-eight hours of much distress in the region of the cardiac orifice, the patient experienced a sense of relief, and the ability to swallow was regained. At the same time a profuse diarrhea of colliquitive character occurred with stools of offensive or "putrid" nature, which continued in more or less profuse amount until death. At the next visit, the patient was able to take liquid food without discomfort, and the mass in the region of the cardia was found to be much softer, less sensitive, and, moreover, the patient distinctly felt the substances swallowed pass into the stomach. Dr. Lovett and the writer both examined the patient with much care, and were equally satisfied that the tumor had diminished in size and hardness, and that the constriction at the cardiac end of the stomach had been relieved by the ulceration of the internal surface of the growth. The frequent and profuse stools of putrefactive character would also to a certain extent corroborate this view. Complete occlusion of the cardiac orifice did not again occur during the patient's life.

The course of carcinoma in the cardiac region of the stomach is accompanied and followed by the same general symptoms and phenomena as when located in other parts of the body. One of the frequent features attending its progress is the infection of the lymphatic glands of the vicinity — in the mediastinum, the lumbar pelxus, those of the groin, of the axillary region, etc. The two latter groups of glands were infiltrated and enlarged during the later stages of the disease in our patient. Cases are reported in which the disease had invaded the bronchi, the pleura, and one in which it extended backward and eroded the vertebræ, causing the clinical symptoms of caries and acute inflammatory disease of the spinal cord, while the existence of cancer of the cardia was not suspected. One of the most serious attendants of cancer in the cardiac region of the stomach is found in the occlusion of the lumen of the esophagus either from the projection of the cancerous masses into its canal, or from the constriction of its walls due to invasion of the pathological process. The patient then experiences the dangers of inanition, and may succumb to the pangs of starvation before the pathological growth would of itself prove fatal. Under these distressing circumstances the food although swallowed, is returned at once into the mouth unchanged, thus presenting a valuable diagnostic indication of the nature of the disease, if any doubt had previously existed. At times, blood may appear in the rejected food, or the histological elements of the malignant growth may be detected by the microscope. In diminished calibre of the cardiac orifice, even to entire closure of its lumen, there is sometimes subsequent restoration of the power of deglutition, with relief to the symptoms of starvation, owing to the ulceration of the constricting carcinomatous tissues, with the re-establishment of communication between the esophagus and the stomach.

The chief features of interest in connection with this individual case, relate to the diagnosis of malignant disease in the region of the cardiac orifice of the stomach, and the treatment appropriate to its relief. Measures to this end would naturally fall into two general classes, namely, those having for their aim the removal of the pathological growth by surgical measures; and those calculated only to relieve the distress of the patient, to facilitate the nutrition and thus lengthen life; though having no direct tendency to cure the disease. The choice between these methods will probably not often be within the discretion of the medical attendant, as the patient can seldom be persuaded to submit to so serious an operative measure as an attempt to remove the disease, at a time when alone this operation would seem justifiable or feasible. The attempt to remove a cancer of the cardiac end of the stomach at any other than an early period of the disease would hardly be encouraged by a careful practitioner.

The only remaining procedure which could be employed with any prospect of relief to the patient, is some operative interference having for its object the introduction of nutriment into the stomach by other than the natural passage. The effort to accomplish this object has given rise to the various operations for gastrostomy, many of which have been discarded on account of difficulty of execution, or unavoidable tendency to a fatal termination. The later operations, however, by which an immediate opening into the cavity of the stomach allows the introduction of food into its cavity soon after the operation, seem to offer better results. Such an operation would undoubtedly be justifiable, and should be recommended whenever the stenosis of the cardia becomes sufficiently developed to cause notable difficulty in the ingestion of food.

In the history of the present patient, the failure to carry out some operative measure for palliative relief at a season when this might seem to have been indicated, is not justly chargeable to the medical attendant nor to the consultant.

Of the actual treatment of cancer of the cardiac orifice of the stomach, unfortunately there is not much to be reported. In almost no region of the body is malignant disease more hopelessly removed from measures of radical treatment adapted to malignancy than in that which is the seat of this affection. Owing to the nature and progress of the malady, there is very little hope of benefit from purely medicinal methods of management. Any operative procedure is accompanied by the gravest prospects for even temporary relief, and a permanent cure must be exceedingly rare. The most which could be reasonably expected from surgical interference would be a temporary alleviation of the distressing symptoms caused by the difficulty of swallowing food, the pain accompanying its ingestion, and the irritation of the diseased area from the passing of the food-masses over its surface. The use of bougies is reported to have been of service for a time in some cases, but the relief has never been of more than temporary character. The closure of the lumen of the cardia from the proliferation of the diseased tissue has at times been followed by the ulceration of the occluding growth, and the restoration of the connection between the esophagus and the stomach, with renewed ability of swallowing. This phenomenon was observed in the case reported in this paper.

The treatment advocated by the few who have alluded to this disease, and its management, so far as known, consists almost exclusively of measures for the alleviation of the distress of the patient by surgical means. Thus Pepper says, "In the light of the fact that purely medicinal treatment affords no promise whatever, we must wait with hope for further experience in operative procedures (Vol. III, page 731). Hilton Fagge states that "the treatment of stricture of the esophagus [cardia?] is purely mechanical, and consists in the use of appropriate dilators or bougies. The utmost care and gentleness are essential, or fatal perforation may ensue. The most valuable indication of stricture is the return of food into the mouth, without change, and the surgeon should consider as probable causes of this: first, thoracic aneurism; second, cancer of the esophagus; third, all other probable causes of obstruction in the tube."

Several methods of surgical interference have been advocated for the relief of cancer of the cardia, and Levy[9] describes an operation he has recently devised, with the help of Fehleisen, for resection of the boundary between the esophagus and stomach. Such an operation, he holds, is rendered justifiable in cases of malignant disease by the success that has attended resection of the pyloric end and of a large portion of the anterior walls of the stomach. The indications for such treatment are regarded as more urgent in cancerous stenosis at the cardiac end than for a like condition at the pylorus. In the latter the patient may be relieved by establishing a communication between the stomach and small intestine, or by forming a gastric fistula; whilst in the former, if the disease be allowed to take its course, nothing can be done to alleviate the consequences of its rapid and extensive growth.

"There are, however, anatomical difficulties in uniting the cardiac end, which at first sight would seem very serious. It might be necessary to divide both vagi nerves, and the connection of this portion of the stomach with other important structures is very extensive and close." In considering the difficulties, the author points out "that the fibres of the vagi as they pass into the abdomen with the esophagus may be divided without any danger to life, and states that by investigation on the human cadaver and on dogs he has proved the possibilities of isolating the cardiac end of the stomach to such an extent that it may be cut away and the divided end of the esophagus be stitched to the margins of the gastric wound. In the operation here proposed, a rectangular incision is made through the abdominal wall, one limb running in the middle line from the ensiform appendix to the umbilicus, the other carried from the lower end of this through the whole breadth of the rectus muscle on the right (?) side. The left half of the smaller omentum is separated from the stomach and the left gastro-epiploica coronary artery and vein are divided between two ligatures. After separation of the cardiac end of the stomach from the structures behind, the lower part of the esophagus is isolated by dividing the serous membrane round this tube with scissors, exposing the anterior part of the esophageal foramen in the diaphragm, and tying all visible vessels, mostly branches of the phrenic arteries, at this part. At this stage there is a risk of wounding the pleura. The intestine being carefully protected by gauze, the posterior wall of the esophagus beyond the disease is stitched to a healthy portion of the stomach, and then the cardiac end of the stomach is divided by a succession of strokes, the cut edges of the anterior and posterior walls being stitched together at each stroke of the knife or scissors beyond the orifice left for the attachment of the esophagus. This tube is now divided in a similar way, each portion as it is cut being stitched to the opening in the stomach. If the esophagus be not fixed before it is completely divided, it will retract and disappear above the diaphragm. The sutures are not carried parallel with the long axis of the esophagus, but obliquely through its coats."

In reviewing the case described in this paper, it is not apparent that any operation would have materially contributed to the relief of the patient after the reestablishment of swallowing, or have essentially prolonged his life. The performance of the operation devised and described by Levy, but of the execution of which I can find no record, would without doubt have secured one desirable result, namely, the autopsy of the patient, while the disease was still in a comparatively early stage of hyperplastic development. Whether any palliative or radical operation would have been of material benefit, to the patient, at any period after coming under medical observation, may well be questioned; but there is a possibility that very early operation might have offered the means of extirpation of the malignant disease. It may, however, well be doubted if the majority of patients would listen to the suggestion of a serious, and quite possibly a fatal operation, at a time when the disease is the source of little pain or inconvenience, and the apprehension of the patient has not been aroused by the development of any serious subjective symptoms.

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REMARKS ON THE OPERATIVE TREATMENT OF STRICTURES OF THE DEEP URETHRA.[1]

BY PAUL THORNDIKE, M.D.

Whatever may be our belief as to the curability of organic stricture of the male urethra, and whatever may be our prejudice for or against the operation of divulsion in any of its forms, or of internal urethrotomy as applied to strictures of the deep urethra, it is probably true that the bulk of surgical opinion to-day is in favor of cutting from without such cases of stricture of the deep urethra as cannot be properly cared for by careful and gradual dilatation with graduated instruments. That the latter cases, that is, those which are treated by gradual dilatation, form a much larger class in the practice of some surgeons than in that of others goes without saying. Still, it must be true that a very large percentage of cases of deep stricture need operative interference of a kind more immediately efficacious than that which can be given by any form of gradual dilatation. Very many of these cases need a cutting operation from without.

It is not the writer's purpose to enter into any discussion of the merits and demerits of the various other operative procedures, such as divulsions or internal urethrotomies, at the surgeon's command; or to consider the class of cases adapted for one or the other of these different operations. That has been done many times over. Suffice it to say, that many of these cases of deep stricture need a cutting operation from without; and whether they form a large or a small number in the practice of any one of us, is not the point under consideration. It is of these cases that the writer wishes to say a few words, taking it for granted that an external urethrotomy has been decided upon. It is of the technique of the procedure itself that he wishes to speak.

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[9] Centralblatt für Chirurgie, No. 31, 1894.

[1] Read at the Annual Meeting of the American Association of Genito-Urinary Surgeons, at Niagara Falls, N. Y., May, 1895.

By an external urethrotomy is meant not merely nicking a hole in the urethra behind the obstructed portion and so draining the bladder without interfering with the strictured portion of the urethra. This was the procedure known as the boutonnière operation of which Cock's operation was a modification.

An external urethrotomy properly performed not only drains the bladder, but attempts the cure of, or the betterment of, the strictured area itself by dividing the stricture. To accomplish this end, the operation is always one of exactness and precision, and frequently one of great technical difficulty. Any procedure which will assist in limiting the technical difficulty of the operation and in shortening the length of time required for its performance would seem to be worthy of our consideration unless there are contraindications for its use.

The procedure for which your consideration is asked is the operation of internal urethrotomy performed with the Maissoneuve instrument and followed *at once* by a perineal section. It was first suggested to the writer by Dr. M. F. Gavin of the City Hospital in Boston, and is now a procedure in common use in that hospital for cases of deep stricture presenting difficulties to the ordinary external operation.

The filiform bougie is passed through the stricture, the Maissoneuve guide is then screwed on, passed down through the stricture, and the stricture cut with the knife in the usual way. The knives should be made large enough so that the stricture can be cut to any calibre desired. Then the instrument is removed, a good-sized, grooved staff can be readily introduced and the perineal opening made in an instant with ease and precision. If the groove in the Maissoneuve guide be made on its convexity, the cut will be made on the floor of the urethra and thereby obviate the necessity of cutting the urethra both on the floor and on the roof.

Hemorrhage and sepsis are the two great dangers to be feared after internal cutting operations on deep strictures, and it would probably be hard to find many surgeons who would advocate such operations in the deep urethra. The combined operation has frequently been suggested as a means of doing away with these risks, and Mr. Reginald Harrison of London has written much upon it. This combination of procedures is called to your notice in a brief way, not as an operation which is new or worthy of universal adoption, but merely as an aid in certain cases which without it might prove very difficult of performance. The writer's experience with it is limited, but he has seen enough of it to be convinced of its great assistance in the cases where it can be properly used. It can be done in all cases of deep stricture when the introduction of a filiform bougie is possible, and in the writer's belief, should be done in many of them. It is then applicable to a large class of cases, saves much time in difficult operations, and greatly increases the precision of work, as the metal guide can be readily seen showing through the already opened urethra when the perineal incision is made. The advantages of perfect drainage are, of course, apparent; and by extending the perineal incision backward so as to give room for drainage behind the cut stricture, complete rest and cleanliness of the stricture itself can be maintained.

The great ease and rapidity of the operation and the perfect drainage which it provides can only be adequately appreciated when the procedure is tried and contrasted with the difficulty and slowness of many of the operations of external perineal urethrotomy with which all of us are familiar.

Reports of Societies.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Ninth Annual Meeting, Niagara Falls, May 28 and 29, 1895.

(Concluded from No. 16, p. 401.)

IODOFORM OINTMENT INJECTIONS IN THE TREATMENT OF SUPPURATIVE ADENITIS OF THE GROIN.

Dr. James R. Hayden, of New York, read a paper on this subject, and described the following method of treating buboes which he has found very satisfactory: The operative field having been shaven and rendered surgically clean, a few drops of a four-per-cent. solution of cocaine are injected beneath the skin where the puncture is to be made. The pus is then evacuated and thoroughly squeezed out through a small puncture. The abscess cavity is then injected with pure peroxide of hydrogen until the fluid returns practically clear. It is then washed out with a 1 to 5,000 bichloride solution and injected with a ten-per-cent. iodoform ointment. Then a cold bichloride dressing is applied, with the idea of congealing the ointment. The patient should be kept quiet for forty-eight hours, although it is not necessary that he be confined to bed. The dressings are removed on the third or fourth day.

Dr. W. K. Otis said that while in many instances the method of treating buboes described by Dr. Hayden is the best, he has usually found that a single injection is not sufficient. Sometimes balsam of Peru is more efficacious.

Dr. Post said that by merely evacuating the buboes through an aspirator, without injecting iodoform ointment or anything else, we may occasionally effect a cure. After evacuation, a firm spica bandage should be applied. No single method is applicable to all cases.

Dr. Taylor said he employs the Fontan-Scott Helm method of treating buboes with almost uniformly good results. Since adopting the plan of washing out the abscess cavity with peroxide of hydrogen, better results have been obtained than heretofore. The fact should be borne in mind that with syphilitic adenopathies we sometimes get a slight periglandular infiltration which is apt to give rise to the sensation of fluctuation.

Dr. Lewis said that if enucleation is performed sufficiently early, when the skin is not very much involved, we can sometimes get almost primary union. In one instance he succeeded in getting primary union on both sides. He has employed the injection method of treatment with varying success.

Dr. James Bell, of Montreal, said that in his experience, the cases suitable for the injection method of treatment are comparatively rare. When there are broken-down glands or peri-glandular ulceration, the injection method is quite unsuitable. Enucleation is not difficult, and the only objections to it are that it requires the use of an anesthetic and leaves a scar.

The greater portion of the wound can usually be sutured.

THE INFILTRATION METHOD OF LOCAL ANESTHESIA IN GENITO-URINARY SURGERY.

DR. BRANSFORD LEWIS, of St. Louis, read a paper on this subject. He stated that in July, 1894, Dr. Schleich, at the German Congress of Surgeons, detailed a new method of producing local anesthesia by the use of intra-cutaneous injections of various drugs. Later, in a monograph entitled "Schmerzlose Operationen," the author treated the subject more extensively, and gave the results of its use in some 3,000 operations, minor and major. The principle of the method consists in injecting intra-cutaneously certain solutions and dissipating the sensibility of the peripheral nerves by the pressure of the infiltrated fluid, by the anemia which it causes, and by the comparatively low temperature at which it is injected. The effects are produced by the fluid itself, rather than by any particular drug which it may contain. The drugs used are of only incidental importance.

In his various surgical procedures, Dr. Schleich found the three following solutions, of graded strength, to answer all purposes.

SOLUTION NO. 1.

Cocain. muriat.	3 gr.
Morph. muriat.	1-3 gr.
Natr. chlor.	3 gr.
Aq. dest. ad	3 oz.

M. Sterilisat. Adde sol. ac. carb. (5%) 3 gtts.

The other two solutions are practically the same, the only differences being that in solution No. 2 the amount of cocaine used is reduced to one and one-half grains, while in solution No. 3 only one-sixth of a grain of cocaine is employed and one-twelfth of a grain of morphine.

DR. BRYSON referred to a case (reported in the *New York Medical Journal*, April 27, 1895) in which he performed complete castration for prostatic overgrowth under cocaine anesthesia. The patient did not feel the slightest pain. Of late, in operating about the bladder, especially in old men, he has been inclined to use cocaine anesthesia in preference to chloroform or ether. He has had no experience with the solutions mentioned by Dr. Lewis. He has employed very dilute cocaine solutions, and the results obtained did not impress him very favorably. He would prefer to use cocaine in those cases where it is possible to first strangulate the parts by a ligature, and so make sure that too much of the drug will not enter the general circulation too rapidly.

DR. CHISMORE said he has twice performed perineal section under the use of very weak solutions of cocaine. In one of the cases, the patient stated he felt no pain whatever. The second patient complained very much of pain when the deeper tissues were handled.

DR. LEWIS, in closing the discussion, said that in the method described the cocaine is only added to produce an immediate and not a permanent effect. We can employ this method in operating on the deeper tissues and in regions which cannot be strangulated by a ligature. Schleich has employed it in performing nephrectomy.

REMARKS ON THE SEMINAL VESICLES,

by **DR. EUGENE FULLER**, of New York.

These remarks were illustrated by numerous photographs of dissections made by the author, which tended to clear up various anatomical points which have hitherto remained in doubt. The exact relation which the prostate bears to the seminal vesicles was shown, and from this relationship inferences relative to the mechanism of ejaculation were drawn. One of the most interesting photographs was that showing the interior of a seminal vesicle, together with its ejaculatory duct. This photograph showed that the cavity of the ampulla of Henle is shut off from that of the vesicle by a valve-like opening, and that the former is very small in comparison with that of the vesicle. By these anatomical demonstrations, Dr. Fuller showed that his process of stripping the vesicles was capable of accomplishment, and that the material stripped out came from the vesicle, and not from the ampulla. The author stated that the photographs, together with a full description, will shortly be reproduced in a book which he is preparing on the subject.

THREE CASES OF EPITHELIOMA OF THE PENIS.

DR. W. N. WISHARD, of Indianapolis, reported these cases, and exhibited a number of photographs illustrating the manner in which each was dealt with. In two of the cases the amputation was made close to the scrotum. In the other, the corpora cavernosa and testes were removed entirely, a small scrotal pouch being left in the event of any subsequent necessity for plastic work. The mucous membrane of the urethra was stitched to the margin of the skin. In all of these cases the disease had advanced far back towards the scrotum at the time of the operation, and in neither of them were the inguinal glands involved. The first case was operated on eight years ago; recurrence took place a year and one-half later at the point of amputation and the patient soon afterwards died. The second case was operated on over four years ago, and the third case six months ago; in neither of these are there any signs of recurrence.

DR. BRYSON referred to a case of epithelioma of the testes coming under his observation, in which the abdominal glands became infected while the inguinal glands were not at all involved, although the scrotum had become infected some months previous to the patient's death.

DR. TAYLOR said that cancer of the penis usually centres itself in the inguinal ganglia, and even if the glands do not appear to be enlarged, they should be taken out, as they are often distinctly cancerous.

DR. CHISMORE referred to a case of epithelioma of the penis reported by him last year in which he removed only about one-third of the glands penis and a few months later the glands in the right groin, which had become involved. About fifteen months after the amputation of the penis one of the glands in the left groin became involved and was removed; the wound never healed, and with the greatest rapidity there sprang from that incision a large, cauliflower-like growth which attained the size of a small cabbage. The patient recently died. There were no signs of recurrence in the right groin or at the point of amputation.

DR. LEWIS said the lines of infection in cases of cancer of the testes and of the penis are essentially different. In the former, the direction of infection is in the iliac glands, while in cancer of the penis the glandular infection is always in the groin. He considered it desirable, when the penis is removed, to remove the testes also; otherwise the stump of the penis rubbing against the clothing is apt to produce a certain amount of erethism, which increases the blood-supply to the parts and may possibly act as a factor in the recurrence of the disease.

Dr. Wishard, in closing the discussion, said he was in favor of removing the testes in these cases.

SECOND DAY.— WEDNESDAY.

Dr. John P. Bryson, of St. Louis, read a paper on

A TABULATED REPORT OF 27 OPERATIONS FOR PROSTATOMYOMECTOMY BY THE SUPRAPUBIC ROUTE, WITH REMARKS,

and in connection therewith he presented a table giving the details of each case. The author stated that this series was commenced when this method of attacking the prostate was still in its infancy, and the technique far from complete. The ages of the patients ranged from fifty to seventy-eight years. The mortality for the entire series (27 cases) was a little over 25 per cent., but this does not represent the true death-rate of the operation. Three cases should be excluded from the mortality list, one of which died from hemorrhage from sarcomatous disease of the prostate, and two from pyelonephrosis. Eliminating these three, there were 24 cases with four deaths, a mortality of 16.6 per cent. A radical cure was obtained in 13 of the cases, evidenced by the absence of residual urine, good rest at night, and a practical cure of the cystitis. In two cases, no benefit whatever appeared to have resulted; these patients were aged, respectively, seventy two and seventy-eight years, were far advanced in senile degeneration, and were operated on mainly in the hope of relieving the most distressing symptoms of "prostatism," namely, frequent and painful urination and inability to get rest or sleep either night or day. The rectal bag of Peterson was used in every case, and in only one instance was there any symptom of irritation to be attributed to it. In nine cases a median perineal incision was combined with the suprapubic opening for the purpose of assisting in removing submucous and intramural masses or to secure proper drainage, or for both purposes. In the earlier operations an attempt was made to close the supra-vesical wound with sutures, later on to abridge the incision by the same means, with the hope of hastening the closure of the wound; these efforts were unsuccessful in every instance.

SIX SUCCESSFUL AND SUCCESSIVE CASES OF PROSTATECTOMY.

Dr. Eugene Fuller, of New York, read a paper on this subject, the important feature of which was the presentation of a method of operation in these cases by means of which the prostatic obstruction is enucleated. An ordinary suprapubic cystotomy is first performed; then an incision is made through the floor of bladder; this incision extends from the lower margin of the vesical opening of the urethra backwards for about an inch and one-half, and is made with rough, serrated-edged scissors, in order to avoid hemorrhage. The forefinger of one hand is then introduced through this cut, while the fist of the other exercises counter-pressure upon the perineum, in order to bring the growth well within the reach of the forefinger. By manipulation, the obstruction can gradually be enucleated, the hypertrophy coming away in one or several pieces. After the enucleation, a perineal incision is made for dependent drainage, the inner end of the drainage-tube entering the bladder through the lower vesical incision made for the enucleation. The suprapubic vesical and abdominal incision is then tightly sutured, with the exception of a small space for a drainage-tube. The reader said that he had never experienced trouble from hemorrhage, either primary or secondary, by this method of enucleation, and felt safe in closing the suprapubic cut. By this method Dr. Fuller claimed the mortality is reduced, and excellent results obtained. He detailed six successful and successive cases operated upon during the past year.

Dr. Bryson reported

A CASE OF COMPLETE CASTRATION FOR PROSTATIC OVERGROWTH: OBSERVATION FOR FOUR MONTHS.

The patient was a man seventy-four years old, who showed evidence of beginning "prostatism" at the age of fifty-six, the symptoms of which gradually increased in severity. When he came under observation there were six ounces of residual urine, with marked diurnal and nocturnal frequency. A cystitis and mild pyelonephritis developed. Two separate attempts to enter upon catheter life failed, on account of the great difficulty to enter the bladder and the recurrence of cystitis. Dilatation of the heart and pulmonary emphysema supervened. All the unfavorable symptoms increasing, complete castration was performed four months ago. It was immediately followed by demonstrable results. There was a marked and satisfactory diminution in the size of the enlarged prostate, without, however, any change in the frequency of urination, day or night, and with but a slight decrease in the amount of residual urine. The pyuria and pyelonephritis remained practically the same as before the operation. In short, the double orchidectomy has caused an almost complete atrophy of the prostate gland, without effecting any change in a chronically inflamed and degenerated bladder, and without curing or even benefiting a chronic pyelonephritis from extension.

THE RESULTS OF TREATMENT OF HYPERTROPHY OF THE PROSTATE.

Dr. J. William White, of Philadelphia, read a paper on this subject, in which he gave the following conclusions:

(1) The function of the testes, like that of the ovaries, is twofold: the reproduction of the species, and the development and preservation of the secondary sexual characteristics of the individual. The need for the exercise of the latter function ceases when full adult life is reached, but it is possible that the activity of the testes and ovaries, in this respect, does not disappear coincidently, and that hypertrophies in closely allied organs, like the prostate and the uterus, are the result of this misdirected energy. This hypothesis would increase the analogy between the fibro-myomata of the uterus and the adeno-fibromata of the prostate, which, from a clinical standpoint, is already very striking, and is further strengthened by the almost identical results of castration in the two conditions.

(2) The theoretical observations which have been

urged against the operation of double castration have been fully negatived by clinical experience, which shows that in a very large proportion of cases (thus far, in approximately 87.2 per cent.) rapid atrophy of the prostatic enlargement follows the operation; disappearance or great lessening in degree of long-standing cystitis (52 per cent.), more or less return of vesical contractility (66 per cent.), an amelioration of the most troublesome symptoms (83 per cent.), and a return to local conditions, not very far removed from normal (46.4 per cent.), may be expected in a considerable number of cases.

(3) The deaths have been 20 in 111 cases, a percentage of 18; but of these there seem to be 13 that may fairly be excluded in an attempt to ascertain the legitimate mortality in patients operated upon under surgically favorable conditions, that is, before the actual onset of uremia, or before the kidneys have become disorganized by the two factors rarely absent in advanced cases — backward pressure and infection. This would leave a mortality of 7.1 per cent., which will probably be decreased as advancing knowledge permits of a better selection of cases. It is important to know that even the desperate cases, which make up this series of deaths (15 or 75 per cent.), showed improvement of symptoms or shrinkage of the prostate before they died.

(4) A comparison with other operative procedures seems to justify the statement that, apart from the sentimental objections of aged persons, on the one hand, and the real, entirely natural and very strong repugnance to the operation felt by younger patients, castration offers a better prospect of permanent return to nearly normal conditions than does any other method of treatment. The relatively greater degree of improvement in successful cases should be considered, as well as the mortality, in comparing the operation with the various forms of prostatotomy and prostatectomy; so too, should the absence of any risk of permanent fistulæ, perineal or suprapubic, and the ease and quickness with which the operation can be performed.

(5) The evidence as to unilateral castration is at present contradictory, but there can be no doubt that in some cases it is followed by unilateral atrophy of the prostate, and in two cases, at least, it has resulted in very marked improvement of symptoms. It is worth further investigation.

(6) My experiments on dogs have shown in nearly every case in which the vas deferens was tied and divided on both sides, that without much change in the testicles, there was beginning atrophy and considerable loss of weight of the prostate. These experiments need repetition and confirmation, as the absence of corresponding testicular change seems to make the results somewhat anomalous. It is possible that the inclusion or severance of small but important nerves may account for the effect on the prostate.

(7) Ligation of the vascular constituents of the cord or of the whole cord, produces atrophy of the prostate, but in my experiments, only after first causing disorganization of the testes.

Dr. E. C. Burnett, of St. Louis, reported

A CASE OF EARLY OBSTRUCTION OF THE EJACULATORY DUCTS.

The patient was a man aged thirty-five years; single; general health good. At the age of five he was operated on for stone in the bladder, the left lateral lithotomy operation being performed. The patient stated that his testicles almost always pained him for a day or so after sexual indulgence. Sexually, he claimed that he was perfectly normal, excepting that he had never had an emission of semen. The external genitals were large and well developed. Upon the introduction of an endoscope into the urethra, the prostatic portion of the canal was found to be extraordinarily short, and the veru montanum was so small as to be barely discernable from the surrounding tissue. Palpation per rectum for the seminal vesicles disclosed the fact that they were not appreciable to the touch, and that the prostate was barely definable. The latter was much smaller than that of a boy of ten or twelve years of age.

During one of his examinations, Dr. Burnett noticed the scar upon the left side of the perineum, and upon inquiry as to its cause was informed of the lithotomy operation performed thirty years before. In this incident in the patient's early history lies the solution of the question as to the cause of his aspermatism. Obviously, in the performance of that operation, the ejaculatory ducts were torn across, becoming permanently occluded, and through the occlusion of these ducts there followed arrest of development of the prostate gland and seminal vesicles. The author stated that obstruction of the ejaculatory ducts is given as one of the causes of atrophy of the seminal vesicles; he could find no reference, however, to any such influence over the prostate.

Dr. Hayden reported a case of double castration for hypertrophy of the prostate in which there was marked relief of all the symptoms and the patient's general condition greatly improved.

Dr. Arthur T. Cabot, of Boston, said he is inclined to believe that the early good effects following the operation of castration for hypertrophied prostate are largely or partly due to the diminution in the blood-supply to the prostate. The relief is too sudden to be entirely accounted for by the process suggested by Dr. White. Dr. Cabot then called attention to the possible secondary effects of this operation on the nervous system. In a certain number of the cases included in Dr. White's list, acute mania followed the operation, and the question comes up whether secondary nervous effects, such as premature senility, may develop later on. The speaker then reported a case in which he performed double castration and litholapaxy at one sitting; the patient was a man aged seventy-five years and in a rather shaky mental condition before the operation. Immediately after the operation he became decidedly maniacal. He was seen by a number of alienists, who expressed the opinion that his mental condition had nothing to do with the loss of his testes. As he failed to improve, however, it was decided to try injections of testiculin. The improvement following its use was very marked. He at once became calmer and more reasonable. Before his mental condition was entirely restored to the normal, the injections were stopped because of the pain they gave rise to, but the improvement continued. It simply seemed as if the injections started him off in the right direction. The speaker said he did not know whether any conclusions could be drawn from this case. It emphasizes, however, the importance of our knowing more about the possible remote effects of the operation on the nervous system before we are willing to displace other operations by this modern one, which certainly has the great merit of being without danger, so far as its performance is concerned.

Dr. Edward Martin, of Philadelphia, said he has seen a number of Dr. White's patients upon whom castration was performed, and could confirm his statements regarding them. In one case in which he did the operation himself the result was very satisfactory. The patient is now comparatively well, and the frequency of urination, which was very pronounced, has disappeared.

Dr. James Bell reported five cases of prostatectomy, operated on by the suprapubic route; of these, two died, the fatal result in both instances being apparently due to toxemia. There was no suppression of urine, and at the autopsies nothing was found to account for the deaths. As regards double castration, Dr. Bell said he felt somewhat prejudiced against it. He dislikes the idea of the mutilation which it entails and it is hard to believe that such rapid atrophy of the prostate occurs as has been reported. We must make some allowance for the reports of cases by enthusiasts who are perhaps not as scientific or as skilled observers as is the originator of the operation. Moreover, the very simplicity of the operation renders it fascinating.

Dr. W. T. Belfield, of Chicago, said that Dr. Bryson's paper showed the improvement that can be brought about in the technique of prostatectomy by extended experience. His results are based on a larger number of cases than have been reported by any other single operator, and they give us a fair idea of the position of prostatectomy to-day. Dr. Fuller's cases are even more remarkable, in that there is an entire absence of mortality. He did not quite understand how the operative technique pursued by Dr. Fuller differed from that heretofore employed by others, and was therefore unable to say whether that was an important factor in the brilliant results obtained. In some of his cases he has certainly removed very large prostatic masses, although probably no larger than were removed by Dr. White in the cases reported three or four years ago.

As regards the value of castration in prostatic hypertrophy, it evidently fails in many instances. The speaker said he would be unwilling to perform it until he has had his finger in the prostatic urethra. He has seen three cases in which the operation was urged where stone was found in the bladder. The operation is done so easily that it is much more apt to be abused than is one which requires a greater degree of skill. The note of warning which he recently uttered against the indiscriminate performance of the operation was provoked by the publication of a case where the facts plainly showed that it had been performed without due consideration.

Dr. Chismore said he was glad to see a more favorable outlook for operative measures on the prostate. As regards double castration, the facts that are fast accumulating in connection with the subject will soon bring out the proper value of the operation.

Dr. E. E. King, of Toronto, said he has thus far performed the operation of double castration in two cases, both of which proved fatal. In neither case, however, was death attributable to the operation itself. The first patient died of pneumonia on the fifth day, and at the autopsy it was shown that the prostate was reduced to fully one-half its former size; both the glandular and stromal elements showed distinct evidence of shrinking. In the second case death occurred on the thirteenth day and at the post-mortem a pyelonephrosis was revealed. These two cases, the speaker said, cannot properly be included in Dr. White's mortality list.

Dr. Glenn said that in cases of chronic hypertrophy of the prostate the testes are of no value, and he saw no reason why double castration should not be performed. Prostatectomy is a very serious operation. The speaker expressed the opinion that from a physiological standpoint, the prostate ought to decrease in size with old age and diminution of the sexual propensity, and he thought that prostatic hypertrophy is largely the result of early gonorrheal infection. He has performed double castration in one case. The patient was in very poor condition, and his death, which occurred several days later, could not be attributed to the operation.

Dr. W. K. Otis said he has been creditably informed that prostatic hypertrophy does not exist in Japan.

Dr. Palmer said the etiology of the condition is obscure. It is said to be found most in those who neglect to urinate when the desire comes on.

Dr. Bangs said his recent criticism of double castration for hypertrophied prostate was not directed against Dr. White, but against those who were unnecessarily and indiscriminately performing the operation. He was glad to welcome any addition to American surgery, and when a brilliant and distinguished member of our own Association presents a new measure, it is important that no discredit should be brought upon it at the outset. Fair and candid discussions, such as we have listened to to-day, will bring out the true value of the operation.

Drs. Bryson, Fuller, Burnett and **White** then closed the discussion of this subject.

Dr. Paul Thorndike, of Boston, read a paper on

THE OPERATIVE TREATMENT OF STRICTURES OF THE DEEP URETHRA.[1]

Dr. Palmer said he still continues to treat his cases of deep urethral stricture by means of internal urethrotomy, and thus far has had no reason to change his method. He expressed the opinion that the dangers of cutting in the deep urethra without a perineal opening have been exaggerated. In performing the internal operation, it is necessary to observe the most careful asepsis. The hemorrhage is sometimes severe but can usually be readily controlled.

Dr. W. K. Otis said he did not agree with the statement made by Dr. Palmer that the dangers incident to cutting in the deep urethra have been exaggerated. He has seen almost fatal hemorrhage follow a deep internal urethrotomy, and he no longer employs that method when the stricture is below five and one-half inches. With a perineal opening the bleeding can be readily controlled.

Dr. Arthur T. Cabot, of Boston, described

A CASE OF CANCER OF THE URETHRA.[2]

Dr. Fuller stated that he reported a case of cancer of the urethra some months ago. An autopsy was refused, and it was impossible to ascertain just where the disease began.

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[1] See page 417 of the Journal.

[2] See page 320 of the Journal.

DR. BRYSON said he has seen two cases where the disease evidently began in the fossa navicularis.

NEW INSTRUMENTS.

DR. W. K. OTIS exhibited the model of an instrument which consisted essentially of a small telescope attached to the urethroscope. By means of this instrument the urethroscopic field is enlarged and a better view obtained.

DR. BRANSFORD LEWIS exhibited a circumcision tractor and clamp.

DR. W. F. GLENN exhibited an instrument, consisting of a small roller attached to a long handle, which he devised for the purpose of milking the prostate and seminal vesicles per rectum. He also exhibited a circumcision forceps.

DR. GEORGE CHISMORE, of San Francisco, reported a case of

TRAUMATIC RUPTURE OF THE URETHRA: RESTORATION AFTER THIRTY-SIX YEARS.

The patient was forty-two years old, a brewer by occupation. At the age of six years, in order to avoid constantly wetting the bed at night, for which he had often been punished, he tied a string about the penis near the scrotum. The constriction thus produced entirely severed the urethra and corpus spongiosum, and divided fully one-half of the corpora cavernosa, so that on bending the penis upwards the severed ends of the urethra were over an inch apart. Two attempts were made in Germany to restore the urethra by a plastic operation, but both failed. Several months ago he came under Dr. Chismore's observation, who first made a perineal section, through which the urine was allowed to flow, and then denuded the tissues of the old wound, precisely as in done in attempting to close an old, torn perineum. The two ends of the urethra were then cut off squarely, a staff introduced, and then the severed portions of the corpora cavernosa were closely drawn together by means of a deep line of buried catgut sutures. Accurate approximation of the under surface of the urethra was obtained by these catgut sutures. No attempt was made to suture the upper or deeper half of the urethra, owing to the difficulty of accurately adjusting the stitches. The corpus spongiosum was closely sutured and the integument then brought together.

On the second day after the operation the man had an attack of delirium tremens. On the thirteenth day the catheter was removed and the perineal incision permitted to close. The man now passes his urine entirely through the normal urethra, the severed ends of which have united so closely that the introduction of a bulbous sound fails to reveal the line of union. Since the operation the man has had two erections, without pain.

In connection with the above case, Dr. Chismore exhibited a number of photographs to illustrate the technique of the operation.

The following officers were elected for the ensuing year: President, Dr. Claudius H. Mastin, of Mobile, Ala.; Vice-President, Dr. Francis S. Watson, of Boston; Secretary, Dr. W. K. Otis, of New York.

It was decided to hold the next meeting of the Association at Atlantic City, N. J.

A **PENSION** of £200 a year has been granted to the widow of the late Professor Huxley.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

F. W. DRAPER, M.D., SECRETARY.

THE Annual Meeting of the Society was held at 19 Boylston Place, Boston, June 11, 1895, twenty-four members present and the President, **DR. Z. B. ADAMS**, in the chair.

The **PRESIDENT** reported, for the Executive Committee, that in conformity with the committee's urgent request the attorney-general had transmitted to each medical examiner a communication officially "suggesting that he shall not consent to be employed in criminal cases excepting upon the request of prosecuting officers."

The Treasurer, **DR. PAINE**, reported a balance of $108.01 in the Society's treasury.

The following were elected as the officers of the Society for the ensuing year: President, Dr. S. W. Abbott; Vice-President, Dr. B. H. Hartwell; Corresponding Secretary, Dr. J. A. Mead; Recording Secretary, Dr. F. W. Draper; Treasurer, Dr. A. E. Paine.

DR. G. DEN. HOUGH, of New Bedford, read a paper entitled

THE POST-MORTEM SIGNS OF DROWNING.[1]

DR. SMITH, of Portland: It seems to me the subject has been more than exhaustively covered, and as a work of reference it cannot fail to be of essential service to the members of this Society and any one else who may have access to it for that purpose. I was particularly struck with an allusion which the reader made to the importance of placing a true estimate upon wounds upon the body. To me this has often proved a source of considerable annoyance and some apprehension. As most of you know, in the State of Maine we have no law controlling autopsies upon the dead bodies found in suspicious circumstances. Most of the autopsies are made at the discretion of the coroner — probably, all things considered, one of the worst things to further the ends of justice that could be advised. I have on several occasions been a good deal puzzled by marks on the body, some of which I have not found mentioned in works treating upon this subject. Of course, in a general way we should endeavor to account for wounds and for bruises or other lesions of the surface in the ordinary way, judging somewhat by the amount of discoloration, the particular portion of the body affected by these marks, bearing in mind the limitations made by immersion in the water, by the peculiar circumstances under which they are found; but it often becomes an exceedingly nice point, especially in cases of bodies found drowned when it may be suspected that the individual was intoxicated when he went into the water. Sometimes it is not only difficult, but absolutely impossible, to say whether an injury was received when the body fell from a bridge or wharf into the water, or whether it was received after death from drowning yet while the body was still warm. A year or two ago I met with a form of mark upon the body which I had not seen before, which was easily explained after a little investigation. I was called by a coroner to make an autopsy upon a body found floating in the dock, and from every evidence it was probable that the body had not been immersed more than ten or twelve hours.

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[1] See page 409 of the Journal.

Information came to me at the time I was called that violence was suspected, because there was evidence on the face and side of the head of marks. I found the body in pretty fresh condition, with an area of discoloration upon the left side of the head just below the zygoma, and the temple and cheek and side of the neck finely spattered as though the skin had been perforated by powder-grains and the body had been superficially washed. I looked it over, examined it carefully, got out two or three of the grains, rubbed them in my fingers and they gave a pretty black mark. I took a sponge and carefully scrubbed the skin, and found the site of every one of these little black marks was a cleanly cut and chiselled wound, and microscopical examination of the material removed from the incisions showed it to be earthy matter, clearly the mud of the dock in which the body had been floating, and the little marks in the skin had been made by the edge of the little barnacles where the body had been washed back and forth and the head struck against the piling, and the marks were as beautifully done as though done with an instrument. The physician first called to see the case allowed his lack of judgment to get the better of him, and gave the coroner points on the powder-marks — and to the inexperienced eye they did seem to be such. Perhaps that is extraneous to the discussion. I introduce this as bearing in an interesting way upon the variety of marks that may be found. That impressed upon me the necessity for avoiding hasty judgments in cases of this kind, particularly where our actions and the circumstances of the case are likely to be the subject of public discussion in the papers.

I wish to express the great pleasure I have experienced in listening to the paper.

Dr. W. S. Birge, of Provincetown, presented a paper on

A CASE OF CRIMINAL ABORTION WITH PECULIAR FEATURES.[3]

Dr. Quimby: I was very much interested in the paper. I once had an experience in which the body of an infant was found concealed in an ash-heap in the rear of a house. On looking into the matter it was learned that the servant girl had been complaining of being unwell with the "summer complaint." This girl arose in the night, and was gone out in the yard an hour or so. The mistress of the house heard her as she came in and asked what the trouble was. She replied that she had diarrhea and had been out to the closet. The case came to trial before the grand jury. The cord was six or seven inches long. The child had evidently bled to death. The mother was allowed to escape on the ruling of the court that there was no evidence to show whether the child might have bled to death before fully born or not. She said she became unconscious, and while she lay there the cord was broken. There was no penalty beyond the matter of concealing the birth of the child.

Dr. Hough: I should like to ask what the condition of the lungs was in the case that Dr. Quimby reported. If the lungs were fully inflated it would seem as if the child was entirely born before it died.

Dr. Quimby: The lungs were inflated with air. They asked if the child could not have breathed when partially born, and I could not say; and on that technicality the girl escaped. I thought she ruptured the cord and allowed the child to bleed to death, but could not say so.

Dr. Adams: As to the possibility of concealment of pregnancy, I recall that almost the first puerperal case I was called to was that of a young woman who, her mother told me and I had every reason to believe it, carried a child to full term and it was born without their having for a moment suspected she was pregnant; and the child weighed about nine or ten pounds. She was a woman of ordinary size. So that it is not such an incredible thing as might at first appear that a woman should live among her relatives and carry a child to full term and not be suspected.

Dr. Hartwell: I should like to emphasize the President's statement with a case I had. A woman from the city came into the country seeking employment. She got employment in a family occupying a high position. Her condition was not suspected. After she had been there two or three weeks she felt unwell one morning, and said to the people that she had been to the water-closet several times during the night with an attack of diarrhea. They did not think it strange until the husband discovered the after-birth in the privy, recognized it as such, and the wife also said it could be nothing else. She accused the girl then and there, and she acknowledged that she had been pregnant and had borne a child, and told where it was. It was found with distinct marks of strangulation. She stated that the child was mature, weighed nine or ten pounds, that she came there with the purpose of getting rid of it, and that she choked it to death. These people employed the girl without suspecting pregnancy, and did not suspect it after the child had been born. The woman was arrested, but escaped from the officer and was never found.

Dr. Hoitt: I think this matter of criminal abortion should be taken up by the Society at some future meeting and discussed. I think it is a serious question to take into consideration. Within the last two months in my city, we have had two cases of the kind where children have been thrown away in this same way. I may mention a case where a lady came to town for the purpose of having an operation performed, and made application to one physician who refused, went to another who performed the operation, he making the subsequent calls. She and the family becoming somewhat dissatisfied with the treatment, a rival physician was called in who at once exposed the thing to the friends who had not been made acquainted with the facts, she being in a dangerous condition, as he thought. Believing herself at the point of death, she confessed. The judge requested me to go in company with the Clerk of the Courts and take her ante-mortem statement, which I did. She confessed that she went to his office with the express purpose of getting rid of a child, and not for the benefit of her health as he afterwards claimed in court. Finally, she recovered. The State did not work up the case one particle, and the accused was discharged. There was positive proof of guilt. There have been several such cases in the city of Marlborough in the last year, and I think it is a matter that should be looked into. Men are going boldly into this business, not only in Marlborough but in Boston, and I think it is our duty to expose these matters in order to stop this criminal work. In the case referred to, the ante-mortem statement was not introduced into the trial, as the woman lived.

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[3] See page 412 of the Journal.

Dr. Hough: I have been informed by a legal authority that it makes no difference whether the person recovers or dies after the making of an ante-mortem statement, believing that he is going to die. It holds, and a case was stated to me where a person's ante-mortem statement was used in court to contradict the statement made after the person recovered.

Dr. Hartwell: I think the doctor is right in relation to the ante-mortem statement. I have heard eminent legal authorities say it makes no difference whether the person lives or dies, that a statement made with the fear of impending death was of the nature of a statement under oath and had that same effect before the courts. I think the courts are not wholly to blame in the matter of prosecutions. A case once occurred in which I officiated. A physician was convicted of manslaughter. The court never sentenced him and he went free out of the courtroom. I do not remember whether there was an ante-mortem statement which the court would accept as being of the nature of a statement made under oath or not, but it was a most estimable young lady of the city of Marlborough, and she made certain statements which aided very materially in his conviction. But the sentence was never given.

Dr. Hoitt: For the information of this Society I will say that that case came up and was put over from term to term, and a petition was circulated requesting the judge, on account of the age and good behavior of the defendant in years past, to be lenient in his decision. The physician is now dead.

Dr. Harris: There is no doubt that criminal abortion, certainly in Boston, is very prevalent. I don't think I exaggerate when I say that not a few are performing three or four criminal abortions every day and oftentimes for the modest fee of ten dollars. The reason that these people are not convicted lies first in the great immunity from danger of this operation. It ordinarily means a short indisposition, and most of them get off with their lives and then they do not tell. Another reason why they fail of conviction is because, while we, as medical examiners, know what steps to pursue, we are not in attendance, and the physicians in attendance do not know or do not take the proper measures to secure the conviction of the individual who performs the operation. The registered physicians of Massachusetts ought to know that in each of these cases they would further the ends of justice by obtaining this ante-mortem statement and also the conditions under which it must be obtained, that is, there must be collateral proof that the woman believes she is going to die, otherwise the testimony is of no avail. As citizens, it seems to me it is our duty to inform the physician in attendance what steps to take in order that these people may be convicted.

In regard to this matter of the ante-mortem statement, the gentleman is right in saying that a statement made in the belief of impending death can be used to contradict a witness if put on the stand. I do not believe it can be used if the witness is alive and testifies herself. If she testifies and contradicts that statement, it can be used. I would say, further, that two cases have come under my observation where women servants (in one case six weeks and in the other two months before delivery) had not been suspected of being pregnant by the people in the house. In one case the woman was found with a child on the floor of the kitchen, where it was concealed through the instrumentality of the milkman; and in the other case, both woman and child were found dead, the woman having had a post-partum hemorrhage. So that the concealment of pregnancy under those circumstances is a tolerably easy matter.

Dr. Pinkham: One registered physician in Boston is well known in our community as a skilful abortionist who performs operations according to the demands of antiseptic treatment, and she also refers her patients for after-treatment to some regular physician. It is not uncommon to have patients come to the office to be treated for some uterine disease, and say that they have had so many abortions produced and some of them quite recently. The fact I wish to emphasize is, that that physician secured registration and is on the same standing as ourselves as regards the practice of medicine in the State of Massachusetts.

Dr. Hough: I happened a few years ago to come across a case of concealed pregnancy where a girl living with her father and mother came to term. She told her people she had cramps in the stomach and they sent for a physician, who came and found what the trouble was. The girl asked him to shut the door, which he did. He delivered the child, rapped it up in a shawl, passed it out of the window to the father, and the child is alive to-day. The matter of ante-mortem statement is one I have had some question about in a case of abortion within a week. The attending physician in this case took legal advice about the ante-mortem statement so as to be sure he had it straight. He consulted one of the best lawyers in New Bedford, and followed his instructions, but he did not get an ante-mortem statement that any court would allow to go in. He was not able to show that the girl believed she was going to die. That is the whole point.

Dr. Birge: I would like to ask if the physician performing the abortion in a case of that kind is responsible for the death of the child, or is it the mother?

Dr. Pinkham: I should think they were both responsible.

Dr. Harris: It seems to me, in the case reported, the child was born alive. Then the mother was responsible if any one. In certain conditions the law would hold the mother not responsible. If the child is born dead the physician is morally responsible, but can only be prosecuted under the law of criminal abortions, not under the law against infanticide.

Dr. Pinkham showed a specimen illustrating

AN UNUSUAL CRANIAL FRACTURE.

The lesion was produced by a blow from a small bottle thrown at the deceased in a quarrel and striking the side of the head above the zygoma. The man lived about five hours, and the autopsy found a small, depressed fracture of the temporal bone, within which was a large extra-dural clot, compressing the brain.

Dr. Hough stated that he was engaged in making observations upon the function of larvæ and other insect life in promoting putrefaction and in helping, by a study of their stage of growth and their variety, to determine the interval since the death of the person in whose body they are found. He asked the Society's co-operation in the work.

Dr. Harris called attention to the lack of uniformity in the returns made annually by the medical examiners to the Secretary of the Commonwealth, under the requirements of the statutes.

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TOTAL EXTIRPATION OF THE EPIGLOTTIS BY SUB-HYOIDEAN PHARYNGOTOMY.

Rosenbaum, in an interesting article in a foreign medical journal,[1] has collected all the cases on record (some thirty in number) of infra-hyoidean pharyngotomy for extirpation of the epiglottis. This operation was first performed by Prat in 1859, and was spoken of with favor by von Langenbeck twenty years ago. The following case, reported by Rosenbaum, will be of interest as giving a fairly typical description of the operation, and as showing how comfortably a man can live without his epiglottis.

February 17, 1892, there entered the private clinic of M. Israel a man aged sixty-four years with a cauliflower-carcinomatous outgrowth from the epiglottis, of three years' standing, and which had invaded the right lateral glosso-epiglottic fold. February 18th, tracheotomy was performed; and three days later, the tumor was extirpated by the sub-hyoidean method. The ordinary canula having been replaced by the sponge canula of Hahn, a transverse incision was made immediately below the os hyoides. The muscles attached to the hyoid bone were cut near this bone, only the lateral portion of the thyro-hyoid muscles being left intact. When the undivided fibres of these muscles were separated on each side, the superior laryngeal artery and nerve were brought to view; care was taken not to injure them. The median thyro-hyoidean ligament was then divided transversely close to the hyoid bone, then the glosso-epiglottic fold was cut. The epiglottis was then drawn well into the wound and completely extirpated.

With the epiglottis, a portion of the glosso-epiglottic folds was removed. A sound was placed in the esophagus, by the nares, and left; then the pharynx was closed from the side of the wound by sutures of the mucous membrane. The operation was finished by partial suture of the muscles and of the skin. In the cavity of the pharynx thus completely closed a tampon was introduced, to which was attached a thread hanging out of the mouth.

The results of the operation were favorable. The first day the patient was very restless, and ejected the pharyngeal tampon during efforts at vomiting. The canula in the trachea was removed at the end of three days, and the sound in the esophagus three days later. For six weeks the patient was fed by the stomach-tube, which was introduced several times a day. At the end of three weeks, however, he could swallow solid food without great difficulty; and when finally the use of the stomach-tube was discontinued, deglutition had become almost normal. Some months later the development of carcinomatous glands made an operation for their removal necessary; but there was no further pharyngeal trouble, and at the present time, more than two years after the operation, the patient remains in good health.

The importance of a previous tracheotomy — two or three days before the operation — is insisted on by Rosenbaum, who also gives plain directions as to the care which should be taken to avoid wounding the superior laryngeal nerve, for section of this nerve would be a formidable accident.

According to Rosenbaum, there have thus far been published only three cases of total extirpation of the epiglottis — those of Burow, Schulten, and Krönlein. The success of Israel's operation from a functional point of view, has brought into prominence the fact that the epiglottis is not indispensable to the normal act of deglutition, which is sufficiently ensured by the reflex closure of the glottis and the movement which at the moment of deglutition carries the larynx upward and forward under the base of the tongue.

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[1] Arch. f. klin. Chir., xlix, 4; Semaine Médicale, 1895, p. 420.

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MEDICAL NOTES.

A "Syphilidological Congress" will, it is announced, be held at St. Petersburg in November, 1896.

The British Medical Association. — The attendance at the July meeting of the British Medical Association was 6,000.

The Pasteur Institute. — It is thought that Dr. Duclaux will be appointed director and Dr. Roux sub-director of the Pasteur Institute.

In Memory of Pasteur. — In honor of M. Pasteur the Paris Municipal Council have decided to give his name to the Boulevard de Vaugirard, which adjoins the Pasteur Institute.

A Helmholtz Tablet. — A memorial tablet in honor of Professor Helmholtz has been affixed to the house, No. 8 Haditzstrasse, at Potsdam, where he was born in 1821.

The Graefe Medal. — Dr. Leber, Professor of Ophthalmology in the University of Heidelberg, has been awarded the Graefe Medal by the Ophthalmological Congress recently held at Heidelberg.

PROFESSOR ADAMKIEWICZ HONORED.— Professor Adamkiewicz, of Vienna, has been elected correspondent of the Paris Academy of Medicine in recognition of his researches on the nature and treatment of cancer.

THE GRACE TESTIMONIAL. — The shilling subscription, started by the *London Daily Telegraph*, for a testimonial to Dr. W. G. Grace, the great English cricketer, has amounted to the substantial sum of $25,000.

THE AMERICAN PUBLIC HEALTH ASSOCIATION have elected Dr. Eduardo Liceaga, of Mexico, Mex., President of the Association for the ensuing year. It has been decided to hold the next meeting in Buffalo, N. Y.

A DEATH FROM ANTHRAX.— A death from anthrax occurred last week at Guy's Hospital, London. The patient was a foreman at a horse-hair factory who prior to his illness had to examine a large cargo of horse hair from Russia.

A NEW LABORATORY FOR THE UNIVERSITY OF MINNESOTA. — A new $40,000 laboratory building for the departments of bacteriology, histology and pharmacy in the medical college of the University of Minnesota is in process of construction.

APPOINTMENTS AT JOHNS HOPKINS UNIVERSITY.— Dr. W. W. Russell has been appointed Associate in Gynecology, and Dr. Thomas S. Cullen Instructor in Gynecological Pathology, in the Johns Hopkins University, Baltimore. Dr. Otto Ramsay has gone to Freiburg for a year to study gynecological pathology under Professor E. Ziegler.

THE "INDEX MEDICUS."— At a recent meeting of The Philadelphia County Medical Society, a resolution was adopted that the Society subscribe for two copies of the *Index Medicus.* The Boston Society for Medical Improvement has subscribed for four copies, and the Boston Medical Library Association for two. There are still forty-six subscriptions needed to ensure the continuance of this publication.

"CLIMATE AND HEALTH."— The first number of a periodical bearing this name and published by the United States Weather Bureau, under the editorship of its Chief, Prof. Willis L. Morse, has appeared, and contains a valuable summary of statistics for the four weeks ending July 27, 1895, illustrated by excellently printed maps. The journal will undoubtedly furnish desirable and authoritative information on the subject to which it is devoted.

OVER-EXERTION FATAL TO BOTH PHYSICIAN AND PATIENT.— It is reported in the *Medical Press and Circular* that a Dr. Morley, of Leeds, England, recently rode a bicycle six miles to visit a patient. During the visit he was taken suddenly ill, and died almost immediately. At the inquest the coroner's jury reported that he had died from failure of the heart's action brought on by over-exertion. His patient, who was a lady, also died a few hours afterward from the effects of the violent shock she had received.

"TOXINES ATTACK TUMORS."— The above is the alliterative effort of the head-line artist of a New York daily. It is the heading adopted for the report at the discussion at the New York State Medical Association on the treatment of malignant growths by the erysipelas and prodigiosus toxines. The success of the treatment was probably not sufficient for "Prodigiosus Paralyses Neoplasms," which would perhaps have erroneously implied that the treatment was uniformly successful. The moderation and respect for facts shown in the choice of this head-line are worthy of commendation.

A MEDICAL HERO.— The latest addition to the roll of gallant actions performed by medical men is that of Dr. Charles Toller of Ilfracombe, who, during the recent heavy gale which raged on the west coast of England and at the imminent risk of his life, was lowered by means of a rope down a cliff on the Lee Bay Rocks, which are 150 feet in height, in order to apply restoratives to an apparently drowned sailor. Strenuous efforts were made by Dr. Toller to restore animation, and the patient partially rallied, but expired a few minutes before being landed at Ilfracombe in the lifeboat which had been sent to the rescue. Dr. Toller remained three hours in his perilous position at the foot of the cliff before the condition of the tide allowed of his patient and himself being taken off in a lifeboat.

NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, October 23, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 79, scarlet fever 28, measles 5, typhoid fever 43.

A BEQUEST TO THE MASSACHUSETTS GENERAL HOSPITAL.— By the will of the late Mrs. Susan G. Coolidge, of Cambridge, a large sum of money was left to the Massachusetts General Hospital for the maintenance of free beds.

TYPHOID FEVER IN CONNECTICUT. — The State Board of Health of Connecticut has been notified of an outbreak of typhoid fever which occurred during the recent encampment of the State militia at Bridgeport and limited to a single company. The question of its origin is being investigated, and it will be a matter of interest to find out whether the company in question was provided with water from a different source from the rest of the regiment. Another outbreak which occurred at Danbury and is also under investigation, was confined to the operatives in a single hat factory, twenty-three of whom fell ill. A third outbreak in Danbury affected five members of the same family, and originated from a case contracted at New Medford, and taken sick at Danbury. There were three cases in another Danbury family, attributed to sewage pollution of a well, which the family refused to cease using in spite of the advice of the health officer.

NEW YORK.

A SUPERNUMERARY KIDNEY.—On October 19th, Dr. Philip E. O'Hanlon, Coroner's Physician, in making an autopsy at the morgue on the body of a newly-born male child, found that three fully developed kidneys were present.

THE UNIVERSITY OF THE CITY OF NEW YORK.—The dedication exercises of the new buildings of the University of the City of New York on University Heights, beyond the Harlem, took place on October 19th under the most favorable auspices.

DIPHTHERIA IN HUDSON CITY.—The Jersey City Board of Health has ordered the closing of public school No. 25, in the suburb of Hudson City, on account of the prevalence of diphtheria in the neighborhood of the school. On October 19th five new cases of the disease were reported in Hudson City.

THE LAW RELATING TO SUICIDES.—At a meeting of the New York Society of Medical Jurisprudence held October 4th, Dr. E. C. Spitzka read a paper entitled "A Needed Change in the Law Relating to Suicides." He considered it a mistake to prosecute people who had failed in their attempts to commit suicide, and expressed the opinion that suicide had increased since the present law went into effect.

DEATH OF A SURGEON OF THE CIVIL WAR.—Dr. George A. Mursick died at his home at Nyack on the Hudson on October 17th. He was born in the city of New York in 1834, and was a graduate of the College of Physicians and Surgeons. He served with distinction as a surgeon throughout the Civil War, and was present at many battles. At one period he was in charge of the general hospital at Duval's Bluff, Ark., and towards the close of the war he was made medical purveyor of the Department of Arkansas.

THE SERUM TREATMENT OF TUBERCULOSIS.—Dr. Francesco Carlucci, visiting physician to the Italian Hospital on Second Avenue, having recently received a supply of the serum of Professor Maragliano, of the University of Genoa, for the treatment of incipient tuberculosis, has just commenced a series of experiments with it at the hospital. In addition to treating patients with it he proposes to test the powers of the serum on animals rendered tuberculous by inoculation with the Koch bacillus, and in these experiments he will be assisted by Prof. Vincenzo Gianturco, of the University of Naples, a skilled bacteriologist, who is now in New York on a commission from the Italian Government to examine and report on American hospitals. In order that the best effects might be obtained, the interior of the Italian Hospital was completely renovated before the treatment of cases with the serum was inaugurated.

A SMALL MORTALITY FROM DIPHTHERIA.—The record of vital statistics for the week ending October 19th, shows the smallest mortality from diphtheria that has been reported in any week for a very long period. There were only 12 deaths from this cause, while previously the weekly mortality from the disease had always exceeded 25. On the other hand, there was an increase in the number of deaths from pneumonia; these amounting to 83, and almost equalling those from phthisis, 89. The deaths from violence were also unusually numerous, 62. The total number of deaths reported in the city, 714, was, however, smaller by 24 than the average mortality for the corresponding weeks of the past five years.

THE ANTITOXIN OF DIPHTHERIA AND THE DEATH-RATE OF NEW YORK CITY.—On October 14th, the president of the Health Department made a report to Mayor Strong in which it was stated that the use of diphtheria antitoxin had reduced the death-rate from diphtheria and croup in the city of New York nearly 44 per cent. The antitoxin, as is well known, is produced in the bacteriological laboratory of the Board of Health under the direction of Dr. Herman M. Biggs. The following table was given, showing the cases of diphtheria and croup, and the mortality therefrom, for the first three-quarters of the years 1891, 1892, 1893 and 1894, as compared with the first three-quarters of the present year:

Year.	Cases.	Deaths.	Per cent.
1891	3,686	1,349	36.59
1892	4,158	1,640	37.04
1893	4,721	1,763	37.34
1894	7,446	2,284	30.67
	20,011	6,936	34.66
1895	7,921	1,643	19.43

The report says: "The reduction in the mortality-rate for the first, second and third quarters of 1895, as compared with average death-rate for corresponding periods of previous four years, has been 43.94 per cent. If the death-rate from diphtheria and croup during the first, second and third quarters of 1891–94 had been the same as in 1895, there would have been 3,048 fewer deaths in that period. The large reduction in the mortality-rate from diphtheria and croup for the first three-quarters of 1895 is attributed mainly by the medical officers of this department to the introduction and use of diphtheria antitoxin, and if this remedy had been generally or universally employed, the reduction in the mortality-rate would doubtless have been larger." With the report was submitted a chart showing the death-rate from diphtheria and croup for each period of four weeks during the year ending and the year beginning October 7, 1894.

PHILADELPHIA.

PROF. J. M. DACOSTA has returned from Europe with greatly improved health.

RECEPTION TO DR. W. H. WELCH.—Dr. William H. Welch of Johns Hopkins University was the guest of the Philadelphia Medical Club, at a reception given in his honor at the Hotel Bellevue, on the 16th inst., which was largely attended by the principal members of the profession of Philadelphia and of neighboring cities.

DEATH OF DR. JAMES COLLINS.— Dr. James Collins died of heart disease at his home in Philadelphia, on the 7th inst. in the sixty-fifth year of his age. He was a graduate of the University of Pennsylvania, Class of 1860, and afterwards studied medicine in Germany at Göttingen. He entered the army in 1861 as surgeon of a Pennsylvania regiment, and was in Libby Prison for nearly a year. Subsequently he had charge of a hospital at City Point, Va. He was a member of the Pension Surgeons' Examining Board, and for thirteen years was one of the surgical staff of the German Hospital of Philadelphia. He presided as chairman *pro tem* at the meeting of the County Medical Society a week before his death.

DOINGS OF THE MEDICAL SOCIETIES.—The medical societies have begun their winter's work with vigor. At the College of Physicians, October 2d, Dr. Charles P. Noble read a report of a case of dermoid tumor of both ovaries, complicated by a growth of true bone in the pelvic soft parts, but having no connection with the tumors. Microscopic sections were presented showing the presence of bone in the new growth. There was no evidence of the presence of rheumatoid arthritis in the case, or other abnormalities. The specimens were also exhibitied at the Academy of Surgery, October 7th. Dr. Oscar H. Allis reported a case of gastro-enterostomy for malignant pyloric disease; Murphy's button was used and, sixteen months later, was found at the autopsy in the cavity of the stomach. It had given rise to no especial symptoms during this period, and it was supposed that it had been voided and lost. He also reported a case of carcinoma of the upper part of the rectum, with exploratory opening in the left inguinal region; also a case of hydrocele associated with enlarged prostate, with operation by removal of entire tunica vaginalis and testicle. Dr. W. Joseph Hearn reported a case of obstinate fecal fistula with operation. Dr. Richard H. Harte exhibited a portable operating-table, of hard-wood frame and basket-work of split cane, in three sections; it folded in compact shape and was not heavy, although quite strong enough for ordinary surgical purposes. By an ingenious arrangement Trendelenburg's posture was secured. At the Philadelphia County Medical Society, October 9th, Dr. Thomas J. Mayo read a paper on the local application of cold in acute pneumonia. This was a collective investigation upon the use of the ice-bag in lobar and other forms of acute pulmonary inflammation, the total number of cases being 195, of all ages, with a mortality-rate of 3.58 per cent. It was claimed to be shown by the statistics that the ice applications relieve pain and cough, reduce temperature, ameliorate the disease and shorten its duration, advance the day of crisis, and decidedly lessen the usual death-rate. Strychnine, morphine (as required to relieve restlessness or cough), digitalis and brandy (if needed for the circulation) with a milk diet or easily assimilated food, were recommended to be used in conjunction with the local treatment of ice. Dr. W. V. Ball reported a case of cocaine poisoning, in which an adult woman swallowed a solution containing twenty-two and one-half grains of cocaine. Toxic symptoms promptly ensued, with dryness of mouth and throat, dilated pupils, talkative and maniacal delirium, with a feeling of well-being, and she actively resisting attempts at medication. She was treated by morphine and stimulants and revived in about four hours. During the latter part of treatment she complained of muscular pains and of weakness in lower extremities.

Miscellany.

THE RECENT EVOLUTION OF SURGERY.[1]

THE *British Medical Journal*, in criticising certain points in Mr. Pearce Gould's excellent oration on this subject before the Medical Society, recently published in book-form, rightly says that he is wrong in treating of evolution in surgery as entirely a recent affair. The following passage in this criticism is worthy of quotation:

"There is no such thing as recent evolution, any more than recent space or recent gravitation. And he does not do justice to the great surgeons who lived in the days before antiseptic surgery. He would apply to Lister that fine high-flying saying of Pope's:

> "'Nature and Nature's works lay hid in night —
> God said, "Let Newton be," and there was light.'

"But not even to honor Lister should he speak lightly of those who preceded him, the *fortes* who *vixere ante Agamemnona*. He thinks that their 'brilliancy' was a poor sort of thing that we have done well to leave behind us, but it is really a lost art, and a little more of it would not be a bad thing in these days when everybody operates, whether Nature meant him to do so or not. Nor did our forefathers sacrifice a limb by amputation without regret and abhorrence as deep and strong as those which move the surgeon of to-day; and in general their aims and ideals were more like ours than Mr. Gould implies; when we consider the stupendous difficulties of their task we can only admire their work."

TUBERCULIN *VS.* THE MICROSCOPE IN IOWA.[2]

THE State Board of Health of Iowa was requested by the health-officer of the city of Ottumwa to make a bacteriologic examination of the milk-supply of that city, with a view of ascertaining whether any tubercle-bacilli could be found in the milk. The bacteriologist of the board accordingly examined 563 samples, and found the bacilli present in quite a number of the specimens, so that of 196 cows examined 29 were set aside as tuberculous because of the microscopic test. The secretary of the board was not quite satisfied with the results, and the State veterinarian was called in to apply the tuberculin test. The animals declared tuberculous by the bacteriologist failed to react to tuberculin, and in a herd of 22 cattle, 21 of which had been pronounced sound, eight responded to the tuberculin-test, and at the autopsy were found markedly affected, two of them having extensive involvement of the udder. The bulletin of the board states that no conflict exists in its department on account of this difference in opinion; the two tests are on trial, and the wish of the board is to judge them honestly.

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[1] The Recent Evolution of Surgery. By A. Pearce Gould, M.S., F.R.C.S. London: Kegan Paul. 1895. (12mo, pp. 63.)

[2] Medical News.

The Iowa Board of Health must know that neither the microscopic examination of the milk nor the tuberculin-injection of the cows can determine the *absence* of tuberculosis. Only when positive results are obtained can an opinion be given; the failure to find the bacillus is no evidence whatever of the non-existence of tuberculosis.

The presence of tubercle-bacilli in milk is not easy to determine, and the frequency with which they were discovered by the Iowa bacteriologist would lead one to suspect the accuracy of his observation; but granting that they were found, the failure of the animals to react to tuberculin is no indication that these animals are sound, as the tuberculin test is in no manner infallible. The State Board of Health of Iowa should sacrifice the suspected animals and determine beyond a doubt whether tuberculosis is present or not.

Not only in the testing for tuberculosis, but in using other methods of diagnosis, the fact cannot be too often stated that the failure to *find* a symptom or pathologic condition is no indication of the absence of that symptom or condition.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

The Fifth Annual Meeting of the American Electro-Therapeutic Association was held in Toronto, Canada, on Tuesday, Wednesday and Thursday, September 3–5, 1895. The first day's session began at ten o'clock on Tuesday morning, the President, Dr. A. Lapthorn Smith, of Montreal, introducing Dr. James Thorburn of Toronto, who welcomed the visiting members on behalf of the resident profession. Dr. Charles R. Dickson in an address also welcomed the members. The President then read his address, on "Electro-Therapeutics in General Practice." This was followed by the reading of the Reports of the Committees on Scientific Questions. Then followed the reading of the Papers in their regular order. In the evening the members were invited by the President of the Toronto Street Railway to a ride around the city in his private car. The second day's programme was carried out as announced. The executive session was held in the afternoon, the election resulted in the selection of the following officers, for the year 1895–96, namely: President, Dr. Robert Newman of New York City; Vice-Presidents, Dr. Holford Walker of Toronto, Canada, Dr. D. B. D. Beaver of Reading, Pa.; Treasurer, Dr. R. J. Nunn of Savannah, Ga.; Secretary, Dr. Emil Heuel of New York City; Executive Council, Dr. W. J. Morton of New York City, Dr. G. Betton Massey of Philadelphia, Pa., Dr. W. J. Herdman of Ann Arbor, Mich., Dr. Emil Heuel of New York City, Dr. Wendell C. Phillips of New York City.

In the evening the resident profession, who had taken a lively interest in the proceedings of the Association, tendered to the members a reception at the Toronto Athletic Club. The Chairman of the Committee of Arrangements, Dr. Charles R. Dickson, had arranged a very fine concert, which was followed by a collation.

The third day was devoted to the transaction of unfinished business. To the labors and influence of Dr. C. R. Dickson, the members enjoyed a very pleasant afternoon at the Toronto Exposition, as the guests of the President of the Exposition, Dr. John J. Wittrow. In the evening, the members were the guests at dinner of the Board of Directors of the Exposition.

The President has appointed the following Committees for the year 1895–96, namely:

Committee on Induction Coils and Alternators: Dr. A. H. Goelet, Chairman; Dr. G. Betton Massey, Mr. A. E. Kennelly. Committee on Meters: Dr. M. A. Cleaves, Chairman; Dr. O. B. Douglass, Mr. W. J. Jenks. Committee on Static Machines and Condensers: Dr. W. J. Morton, Chairman; Dr. W. J. Herdman, Dr. J. H. Kellog. Committee on Constant Generators and Controllers: Dr. W. J. Herdman, Chairman; Dr. Robert Newman, Mr. R. G. Brown. Committee on Electrodes: Dr. C. R. Dickson, Chairman; Dr. Lucy Hall-Brown, Dr. E. C. Riggs. Committee on Electric-Light Apparatus for Diagnosis and Therapy: Dr. J. H. Kellog, Chairman; Dr. E. C. Riggs, Mr. J. J. Carty.

It was decided to hold the next, the Sixth Annual Meeting of this Association, in Boston, Mass., in the latter part of September, 1896.

THERAPEUTIC NOTES.

Sand Baths in Sciatica.— It is reported that at Dr. Oppenheim's sanatarium in Berlin, the effect of baths of sand heated by gas in chronic cases of neuralgia, notably sciatic, and in chronic rheumatism and rheumatoid arthritis has been given extensive trial of late, and that excellent results have been attained. By reason of this addition to the resources for treatment of these diseases in Berlin, the *Deutsche Medecinische Wochenschrift* proposes that Berlin be added to the list of "Bathing Resorts" of Germany.

The Treatment of Addison's Disease by Extract of Supra-renal Bodies.— E. Lloyd Jones in the *British Medical Journal* for August 24, 1895, reports a case of Addison's disease in which recovery, or at any rate marked improvement, took place during a six weeks' treatment by supra-renal tabloids and extract. Mercuric perchloride and iodide, and sodic iodide were given during the latter part of the treatment; but during the last six weeks the stomach would not tolerate these remedies, and the thyroid tabloids were the only medicinal treatment. Under their action the nausea and attacks of fainting gradually passed off, the pigmentation of the skin disappeared; and the improvement in every particular was surprising. Dr. Jones remarks that this is the first reported case of Addison's disease in which the treatment by extract of supra-renal bodies has given a successful result, although this treatment has been recently advocated by Dr. Rolleston, in his Goulstonian lectures on this subject.

Correspondence.

CORK PAVEMENT.

Boston, October 14, 1895.

Mr. Editor: — In view of the importance now being attached to sanitary street pavement, and the number of articles published in the medical journals favoring this branch of internal improvement, it is remarkable that no allusion has thus far been made to the so-called cork pavement. This designation is perhaps a misnomer, for the material consists of granulated cork, mixed with mineral asphalt and other cohesive ingredients compressed into large blocks. Strictly speaking then, these bricks are formed of an amalgam of which cork is, however, the most characteristic and important element. The advantages claimed in behalf of this combination are cleanliness, noiselessness, durability, elasticity, freedom from slipperiness whether wet or dry, and moderate cost. Unlike wood, it is non-absorbent and hence inodorous; it presents the minimum resistance to traction; it is elastic under passing loads, and thus does away with the vibration caused by heavy teaming, one of the most disagreeable features of our narrow, congested streets. The blocks are imbedded in tar, and rest upon a concrete base six inches thick.

It is a curious circumstance that in Boston, New York and many other American cities, the smooth, asphalt pavement is being extensively employed with the notion that it is comparatively noiseless. In Paris, where this substance was first utilized on a large scale for paving, it has been actually condemned and torn up, chiefly on account of its noisiness; for experience proved, that while it lessened the rumble of moving vehicles, it greatly intensified the clatter of horses' feet. Although admirable in many respects, asphalt has been proved by careful and repeated observations in London and Paris to be the most dangerous of all to horses by reason of its slipperiness when wet, and it is conceded to be most difficult and expensive to keep in repair. In Paris all the main thoroughfares, such as the boulevards, Champs Elysées, avenue de l'Opera, and rue de Rivoli, are now laid with wooden blocks laid upon a firm, concrete foundation. In London, too, the noisy Belgian pavement has almost everywhere been discarded for blocks of the hard Australian Jarrah wood; and to the stranger who has not visited this metropolis since these improvements have been instituted, it is a revelation to find the roar of traffic once so dominant now virtually abolished. In this respect, as well as in the street-cleaning, our cities are lamentably and disgracefully backward, and Boston has shown less progress than many Western towns.

It is not unfrequently asserted by those who have successfully blocked attempts to reform our streets, that wooden pavement has been tried here and found unsatisfactory. This statement is a partial truth, which by the suppression of essential facts, has all the effect of a misstatement. It is true that State Street was paved with hexagonal wooden blocks about the year 1844. In 1854, I remember to have watched the laying of wooden pavement in Exchange Street, while at a more recent date Columbus Avenue was treated with five different varieties of wooden blocks, each laid in accordance with a different patent process. Now each of these experiments proved a failure for the simple reason that the essential element in laying this pavement, namely, a firm cement-concrete foundation was omitted. Hence the blocks thus unscientifically treated yielded under heavy pressure and, decaying, soon wore uneven; while no adequate provision was made for their repair.

Cork pavement is not altogether a novelty. It has been tested for four or five years in Melbourne, Sidney and other Australian towns, and also in London and Edinburgh, and the invention has been pronounced in all these localities meritorious.

The two specimens which I examined last autumn in London sufficed to remove the scepticism that I had entertained as to its practicability. One section in a Liverpool street leading to the Great Eastern Railway Station, had been in use for nearly two years on a sloping thoroughfare subjected to continuous heavy traffic, largely of goods-vans. The policeman on duty at this point declared that slipping of horses was here unknown. Learning that some blocks from this roadway had been taken up the previous day for examination, I went to the office of the company where the worn specimens were exhibited by the side of new ones, and was there shown that the thickness of the former had been reduced by wear by less than one-eighth of an inch.

As regards cost, cork is not very expensive because its use has up to the present time been so very limited, being employed chiefly as stoppers to bottles, soles to boots, and life-preservers, and as a floor-covering in the form of linoleum. The supply of this commodity on the other hand, can be indefinitely increased, for the species of oak (*quercus suber*), from which cork is obtained, can be stripped of its outer bark every eight years, and is said to actually thrive under this operation for one hundred and fifty years and upward. Hence it is not to be apprehended that a more extensive demand would greatly enhance its price.

Considering then the rare combination of qualities which cork seems to offer in the line of pavement, and the unequivocal proofs offered of its success elsewhere, it would certainly seem worth while to give it a trial on a section of some one of our streets.

Yours respectfully,
A. H. N.

RECORD OF MORTALITY

For the Week ending Saturday, October 12, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,892,332	732	272	14.84	12.88	6.30	1.54	4.06
Chicago . . .	1,678,967	414	157	31.20	9.60	10.80	5.04	13.20
Philadelphia .	1,164,000	—	—	—	—	—	—	7.54
Brooklyn . .	1,100,000	393	179	19.00	12.25	7.00	1.75	6.75
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	494,205	214	87	16.45	12.69	8.93	2.35	4.23
Baltimore . .	496,315	189	72	11.66	11.66	4.77	2.65	1.06
Cincinnati . .	325,000	86	39	15.08	6.96	4.64	4.64	5.80
Cleveland . .	325,000	104	—	12.48	8.64	5.76	.96	.92
Washington .	276,000	126	50	25.60	7.20	7.20	11.20	1.60
Pittsburg . .	272,000	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	36	8	19.46	30.58	8.34	2.78	2.78
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	40	16	25.00	12.50	9.00	7.50	7.50
Fall River . .	88,020	—	—	—	—	—	—	—
Lowell . . .	84,359	32	8	15.15	15.15	12.52	3.13	—
Cambridge . .	81,519	37	15	21.60	10.80	—	—	21.60
Lynn	62,355	—	—	—	—	—	—	—
New Bedford .	55,254	20	12	15.00	—	10.00	—	5.00
Springfield . .	51,534	19	7	15.78	5.26	5.26	—	—
Lawrence . .	52,153	—	—	—	—	—	—	—
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	14	6	21.42	—	14.28	—	—
Brockton . .	33,157	—	—	—	—	—	—	—
Haverhill . .	30,185	13	1	7.69	38.45	7.69	—	—
Malden . . .	29,706	5	4	20.00	—	20.00	—	—
Chelsea . . .	31,295	10	3	—	20.00	—	—	—
Fitchburg . .	26,394	7	3	28.56	14.28	14.28	—	14.28
Newton . . .	27,622	9	4	22.22	—	22.22	—	—
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	9	4	—	—	—	—	—
Waltham . .	20,877	2	0	—	50.00	—	—	—
Quincy . . .	20,712	—	—	—	—	—	—	—
Pittsfield . .	20,447	—	—	—	—	—	—	—
Everett . . .	18,578	6	2	16.66	—	16.66	—	—
Northampton .	16,738	—	—	—	—	—	—	—
Newburyport .	14,554	8	0	—	12.50	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,609; under five years of age 960; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 488, consumption 330, acute lung diseases 245, diarrheal diseases 193, diphtheria and croup 155, typhoid fever 76, whooping-cough 25, cerebro-spinal meningitis 18, malarial fever 9, scarlet fever 5, measles 4, erysipelas 2, small-pox 1.

From whooping-cough New York 10, Brooklyn 7, Baltimore 4, Boston, Nashville, Worcester and Springfield 1 each. From cerebro spinal meningitis Chicago 8, Washington 7, New York 3. From malarial fever Brooklyn 4, New York 3, Cleveland and Nashville 1 each. From scarlet fever New York 2, Chicago, Baltimore and Salem 1 each. From measles Brooklyn 2, New York and Baltimore 1 each. From erysipelas New York and Brooklyn 1 each. From small-pox New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending October 5th, the death-rate was 19.4. Deaths reported 3,949; acute diseases of the respiratory organs (London) 158, diarrhea 565. diphtheria 71, fever 65, measles 64, whooping-cough 56, scarlet fever 48, small-pox (London and Oldham 1 each) 2.

The death-rates ranged from 13.2 in Croydon to 37.2 in Blackburn; Birmingham 22.0, Bradford 19.8, Bristol 18.5, Gateshead 26.1, Huddersfield 14.2, Leeds 18.1, Leicester 15.6, Liverpool 26.6, London 15.9, Manchester 24.9, Newcastle-on-Tyne 24.9, Nottingham 15.6, Portsmouth 19.1, Sheffield 24.5, West Ham 16.9.

METEOROLOGICAL RECORD,

For the week ending October 12th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 6	29.76	54	64	45	81	61	71	N.	W.	13	8	C.	C.	
M.. 7	29.70	57	68	46	76	73	74	W.	S.W.	2	10	F.	O.	
T.. 8	29.70	56	64	49	88	74	81	S.	N.W.	6	15	O.	C.	.31
W.. 9	30.06	44	49	38	77	65	71	N.W.	N.	12	12	C.	O.	
T..10	30.35	44	52	35	80	58	69	N.W.	N.W.	12	4	C.	C.	
F..11	30.34	48	59	38	69	46	58	S.	S.	10	9	O.	F.	
S...12	29.96	58	67	50	83	94	88	S.	E.	12	16	O.	R.	.37
☞														.68

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 11, 1895, TO OCTOBER 17, 1895.

Leave of absence for one month on surgeon's certificate of disability, with permission to leave the limits of the department, is granted **First-Lieut. Isaac P. Ware**, assistant surgeon.

Leave of absence for one month, to take effect about November 10, 1895, with permission to apply to the adjutant-general of the army for an extension of one month, is granted **First-Lieut. John S. Kulp**, assistant surgeon, U. S. A.

Leave of absence for thirty days is granted **Major B. F. Pope**, surgeon, U. S. A.

Captain Julian M. Cabell, assistant surgeon, ordered to David's Island, N. Y., for duty, in lieu of reporting to the surgeon-general for duty.

Major Henry M. Cronkhite, surgeon, having been found incapacitated for active service is retired, to date from September 17, 1895.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING OCTOBER 15, 1895.

Murray, R. D., surgeon. Granted leave of absence for thirty days. October 4, 1895.

Irwin, Fairfax, surgeon. Granted leave of absence for thirty days. October 4, 1895.

Banks, C. E., passed assistant surgeon. Detailed as chairman of Board for physical examination of officers and candidates, Revenue Cutter Service. October 2 and 8, 1895.

Brooks, S. D., passed assistant surgeon. When relieved from temporary duty at St. Louis, Mo, to rejoin station at Chicago, Ill. October 3, 1895.

Williams, L. L., passed assistant surgeon. To proceed from Charleston, S. C., to Waynesville, Ga., as inspector. October 2, 1895.

Magruder, G. M., passed assistant surgeon. Upon completion of duties at Camp Jenner, Eagle Pass, Texas, to rejoin station at Galveston, Texas. October 11, 1895.

Cobb, J. O., passed assistant surgeon. To proceed to Victoria, B. C., and Vancouver, Wash., on special temporary duty. October 12, 1895.

Brown, B. W., passed assistant surgeon. Detailed as recorder of Boards for physical examination of officers and candidates, Revenue Cutter Service. October 2 and 8, 1895.

Houghton, E. R., passed assistant surgeon. Granted leave of absence for thirty days from date of being relieved from duty at Vineyard Haven, Mass. October 5, 1895.

Prochazka, Emil, assistant surgeon. When relieved from temporary duty at Charleston, S. C., to proceed to Cairo, Ill., for temporary duty. October 12, 1895.

Thomas, A. R., assistant surgeon. Relieved from temporary duty at New Orleans, La., and directed to rejoin station at St. Louis, Mo. October 3, 1895.

Greene, J. B., assistant surgeon. Relieved from temporary duty at Wilmington, N. C., and directed to proceed to Vineyard Haven, Mass., and assume temporary command of the Service. October 2, 1895.

RESIGNATION.

Houghton, E. R., passed assistant surgeon. Resignation accepted, to take effect upon expiration of leave of absence. October 5, 1895.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 19, 1895.

G. S. **Beardsley**, medical director, and P. S. **Wales**, ordered to duty as members of the Naval Examining and Retiring Board.

J. S. **Sayre**, passed assistant surgeon, ordered to treatment at the Philadelphia Naval Hospital.

C. H. T. **Lowndes**, passed assistant surgeon, detached from the naval hospital at Mare Island, Cal., and ordered to the Marine Rendezvous, San Francisco, and in attendance on officers in that city.

C. J. **Decker**, passed assistant surgeon, detached from the marine rendezvous and special duty in San Francisco and ordered to the naval hospital at Mare Island.

J. C. **Rosenblueth**, appointed assistant surgeon in the Navy, October 14th.

SOCIETY NOTICE.

Suffolk District Medical Society.—The stated meeting will be held at 19 Boylston Place on Saturday, October 26th, at 8 P. M.

Paper: Dr. C. A. Porter, "The Present Status of Brain Surgery."

Discussion: Dr. Walter Channing, "Trephining for Insanity." Dr. Morton Prince, "Trephining for Epilepsy and Infantile Cerebral Palsy." Dr. G. L. Walton, "Trephining for Cerebral Hemorrhage." Dr. P. C. Knapp, "Trephining for Tumors and Abscess of the Brain."

Business: Election of a committee of five to prepare a list of candidates for officers of the Society for 1896-97. Reports of committees.

Supper after the meeting.

John G. Blake, M.D., *President*.
H. L. **Smith**, M.D., *Secretary*.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be delivered on October 24th, at 8 P. M., by **Prof. F. C. Shattuck**. Subject: "Some Points in the Diagnosis and Treatment of Pericarditis." The lecture on October 31st will be by **Dr. Wm. A. Brooks, Jr.** Subject: "The Influence of Athletics on Health." The profession are invited.

APPOINTMENTS.

Dr. Frederic Pearl has been appointed assistant physician in the new South Wards at the Boston City Hospital.

Drs. F. H. Williams and **C. F. Withington** have been appointed visiting physicians to the Boston City Hospital.

BOOKS AND PAMPHLETS RECEIVED.

An Essay on Diphtheria and Its Specific Treatment. By John Pirnat, M.D., Evansville, Ind., U. S. N. A.

The Surgical Technique of Aseptic Wounds. Sanitation in Street Pavement. By Henry O. Marcy, A.M., M.D., LL.D., of Boston, U. S. A. Reprints. 1895.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum 2
Anheuser-Busch Brewing Association 5
Antikamnia Chemical Company...Antikamnia 30
Armour & Co............The Armour Laboratory 14
Ayer's Hygienic Coffee 25
Baker, L. W., M.D.... ....Riverview 19
Baker, Dr. W. H ....Cara 19
Battle & Co. ....Bromidia 23
Bellevue Hosp. Med. Col..... Sessions of '94-95 16
B. H. R. Distilling Co. 18
Borine Chemical Co. 10, 20
Boston City Hospital..........House Officers 2
Bowdoin College..........Medical Department 16
Bowker, Dr. E. M.......... ......Vaccine Virus 3
Boylston Medical Prize Questions 2
Breitenbach Co., M. J..........Pepto-Mangan 4
Channing, Dr. Walter 19
Chauncy Hall School 31
Cocke, Dr. James R. 19
Codman & Shurtleff......Surgical Instruments 22
Coll. of Physicians and Surgeons, Boston... 16
Coll. Physicians and Surgeons, Baltimore, 16
Crittenton, C. N..........Vinolia Soap 3
Cutter, Dr. W. P. 19
Dadirrian, Dr..........Matzoon 20
Dartmouth College, N. H....Med. Department 16
Doliber-Goodale Co..........Mellin's Food 1
Drevet Co..........Glycozone 15
Fairchild Bros. & Foster..........Milk Mixture 7
Feeble-Minded Youth, Inst. for..Barre, Mass. 19
Fehr, Dr. J..........Baby Powder, etc. 24
Fellows, James I. ....Hypophosphites 21
Fisk & Arnold..........Artificial Limbs 19
Flood, Dr. Everett 19
For Sale 2
Fougera, E. & Co..........Imp'g Pharmacists 8, 26
Gear, J. Frank..........Surgical Instruments 23
Goldthwaite, Dr. S. V. 19
Goode, T. F..........Buffalo Lithia Water 13
Gould's Medical Dictionary 28
Graham, Dr. Douglas......Treatise on Massage 22
Greene, Dr. E. M..........Examinations of Sputa 19
Harvard University..........Dental Department 16
Harvard University..........Medical Department 32
Improved Movement Cure Institute 3
Leedom, Charles..........Nuclein Solution 23
Lehn & Fink..........Mfg. Chemists 9
Lloyd, Andrew J. & Co. .....Manufg. Opticians 2
Long Island College Hospital 16
Mackie, Dr. L. V. G. .... Sanitarium 19
Maltine Mfg. Co. .... Maltine 11
Mariani & Co..........Vin Mariani 11
Marks, A. A..........Artificial Limbs 12
Martin, Dr. F. C..........Vaccine Virus 25
Mass. Charitable Eye and Ear Infirmary... 2
McElroy, P. J..........Glass Syringes 8
Medical Practices, etc. 2
Medico-Chirurgical College 16
Norton, Dr. Eben C. ....Card 16
N. Y. Polyclinic and Hospital 16
N. Y. Post-Graduate School and Hospital.. 17
Oakland Chemical Co........Hydrogen Dioxide 4
Patch, E. L. Co.......... .....Lithia Tablets 27
Peake & Buzzell ....Surgeons' Supplies 10
Pinaud, Ed..........Sels Romains 10
Polk, R. L. & Co.......Med. and Surg. Register 24
Practice For Sale 2
Purdue Frederick Co., The 17
Reed & Carnrick..........Peptenzyme 12
Ring, Dr. Allan Mott..........Nervous Diseases 19
Russell, Dr. F. W ....Card 19
Schieffelin & Co..........Mfg. Chemists 14
Schulze-Berge & Koechl......Migranin, etc. 25, 31
Seeley, I. B. & Co.......... .Hard Rubber Trusses 27
Sharp & Dohme..........Mfg. Chemists 5
Stedman, Dr. Henry R..........Card 19
Stillings, Dr. L. C. ....Card 19
Tanner, E. S..........Publisher 31
Thayer, Henry & Co. 25
Theodore Metcalf Co..........Coca 6
Twitchell, Dr. George B..........Card 19
Tyree, J. S. ....Antiseptic Powder 27
University of Maryland 16
University of Vermont 17
Walnut Lodge Hospital 19
Waterman, Dr. Thomas..Animal Vaccine Virus 2
Weeks & Potter Co. ....Quinona 29
Wheeler, Dr. T. B.... ....Phosphates 27
White, Dr. Walter H..........Card 19
Willard, Dr. A. J..........Card 19
Woman's Hospital, Lowell 19
Woman's Medical College, Baltimore....... 16
Woman's Med. Coll...of the New York Infirmary 16
Woodward, L. F. ....Stammering 19
Yale University..........Medical Department 16

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†10. Surgical Pathology	Dr. Mallory	Medical School	Apr., May	20.
†11. Pathology of the Infectious Diseases.	Dr. Wright	Medical School	Nov., Dec.	25.
†12. Pathological Anatomy and Histology of the Nervous System	Dr. Taylor	Medical School	Special*	15.
13. Clinical Medicine	Dr. Ernst	Massachusetts General Hospital	Oct.	15.
†14. Clinical Medicine	Dr. Knight	Boston City Hospital	Oct., Nov.	10.
†15. Clinical Medicine	Dr. Mason	Boston City Hospital	Nov., Dec., Jan.	20.
‡16. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Oct.	20.
‡17. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Dec.	20.
‡18. Abdominal Surgery	Dr. Conant	St. Elizabeth's Hospital	Oct., Nov.	25.
19. Clinical, Operative, Genito-urinary, Pathological and Minor Surgery	Drs. Monks and Thorndike	Boston City Hospital	Oct.—Dec.	25.
20. Clinical, Operative, and Minor Surgery	Drs. Burrell, Lovett, and Munro	Boston City Hospital	Dec.—Apr.	25.
21. Operative Surgery	Dr. C. B. Porter	Medical School	Special*	25.
22. Clinical Surgery	Dr. M. H. Richardson	Massachusetts General Hospital	Feb., March, Apr., May	25.
‡23. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Oct., Nov., Dec.	25.
‡24. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Apr., May, June	25.
25. Minor Surgery	Dr. Scudder	Massachusetts General Hospital	Feb., ‡Apr., ‡May	25.
26. Clinical Surgery	Dr. Gay	Boston City Hospital	Apr., May	15.
27. Clinical Surgery	Dr. Homans	Massachusetts General Hospital	March, Apr.	20.
†28. Orthopedic Surgery	Dr. Bradford	Children's Hospital	Apr.	15.
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35. Otology	Dr. Bryant	Infirmary	Dec., Jan	25.
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44. Gynecology	Dr. C. M. Green	Boston City Hospital	Oct., Nov., Dec.	25.
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‡47. Diseases of the Nose and Throat	Dr. Farlow	Boston Dispensary	Oct.—Jan.	Special.*
‡48. Diseases of the Nose and Throat	Dr. Farlow	Boston City Hospital	Apr., May.	Special.*
‡49. Diseases of the Nose and Throat	Dr. Coolidge	Massachusetts General Hospital	Feb., March	Special.*
†50. Mental Diseases	Dr. Cowles	McLean Hospital	Special*	10.
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†53. Diseases of Children	Dr. Wentworth	Children's Hospital	Dec., Jan.	20.
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†55. Diseases of Children	Dr. Buckingham	Children's Hospital	Apr., May	20.
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†57. Neurology	Dr. Knapp	Boston City Hospital	Apr., May	20.
58. Neurology	Dr. Walton	Massachusetts General Hospital	Nov.	20.
59. Legal Medicine	Dr. Draper	Boston City Hospital	Oct.—June	25.
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For further information and full description of all the courses mentioned, address

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PAGE

ORIGINAL ARTICLES.

Circumstances under which Chloroform is Preferable to Ether as an Anesthetic. *By George W. Gay, A.M., M.D.*, Visiting Surgeon to the Boston City Hospital 433

The Post-Mortem Signs of Drowning. *By G. DeN. Hough, M.D.*, New Bedford, Mass. (Concluded.) 436

CLINICAL DEPARTMENT.

A Case of Abdominal Nephrectomy for Cystic Kidney; Recovery. *By Charles A. Atwood, M.D.*, Taunton, Mass 440

MEDICAL PROGRESS.

Report on Gynecology. *By F. H. Davenport, M.D.* 442

The Causes of the Normal and Pathological Positions of the Uterus. — Ovarian Resection. — Bacteriological Investigations Concerning Disinfection of the Hands. — Determination of Sex. — Freund's Operation for Prolapse. — Treatment of Uterine Cancer with Alcohol Injections. — Pregnancy after Salpingo-Ovaritis and Suppurative Pelvic Peritonitis (Twelve Cases). — Complete Vaginal Hysterectomy.

NEW INSTRUMENTS.

New Instruments. *By Edgar Garceau, M.D.*, Boston, Surgeon to Out-Patients, Free Hospital for Women 444

PAGE

REPORTS OF SOCIETIES.

American Orthopedic Association. Ninth Annual Meeting, Chicago, September 17, 18 and 19, 1895 445

The Growth and Prosperity of the American Orthopedic Association. — Flat-Foot. — Congenital Absence of Radii, with Operation. — Removal of the Astragalus for Talipes Valgus. — Tendon Transplantation in the Treatment of Deformities Resulting from Infantile Paralysis. — A Study of the Weak Foot with Reference to its Causes, its Diagnosis and its Cure; with an Analysis of One Thousand Cases of So-Called Flat-Foot. — Metatarsalgia. — The Deformities and Malformations Resulting from Acute Infections in Bone. — Joint Disability following Fractures. — Ambulatory Treatment of Pott's Disease. — A New Spine Brace. — Report of Four Cases of Spondylitis of the Second Cervical Vertebra. — A Study of the Anterior Forms and Burrowings of Lumbar Abscesses. — A Combination Traction and Immobilization Hip-Joint Brace. — A New Surgical Saw. — Excision of the Knee as an Orthopedic Procedure. — An Apparatus for the Treatment of Club-Foot, and two Contrivances to be Used in Head-Traction and Hip-Traction. — Mechanical Support in the Treatment of Scoliosis.

EDITORIALS.

A Medical View of the Miracles at Lourdes 450

Reorganization of Medical Boards in the New York City Hospitals 452

PAGE

Medical Notes 452

Homeopathy in Peru. — "Index Medicus."

New England.

Acute Infectious Diseases in Boston. — The Staff of the City of Boston Almshouse and Hospital.

New York.

Adenoids and Naso-Pharyngeal Catarrh. — Death of Dr. Conrad.

CORRESPONDENCE.

Too Much High Pressure at School. *Douglas Graham, M.D.*, Boston 454

MISCELLANY.

One Thousand Major Gynecological Operations 453
Deaths under Anesthetics: Chloroform ... 454
Obituary. — Benjamin Cushing, M.D 454
Record of Mortality, October 19, 1895 455
Meteorological Record, October 19, 1895 456
Army and Navy Services 456
Society Notices 456
Harvard Medical School. Evening Lectures 456
Philadelphia Academy of Surgery. The Samuel D. Gross Prize 456
Recent Death 456
Books and Pamphlets Received 456

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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EDWARD JACOB FORSTER. M D.,
Secretary of the Visiting St
51 Massachusetts Avenue, Boston,

BOSTON, 21 October, 1895.

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Original Articles.

CIRCUMSTANCES UNDER WHICH CHLOROFORM IS PREFERABLE TO ETHER AS AN ANESTHETIC.[1]

BY GEORGE W. GAY, A.M., M.D.,
Visiting Surgeon to the Boston City Hospital.

It may seem rank heresy for one who was educated at the Harvard Medical School and who has practised surgery under its shadow for a quarter of a century to advocate the use of chloroform as an anesthetic under any circumstances whatever. Those who have been educated, and have practised surgery, in other parts of our country, or in foreign lands, can hardly realize the antipathy which formerly prevailed against chloroform throughout New England, and which exists to a very great degree at the present day. Aside from those gentlemen, who saw service in the late war, where for various and obvious reasons chloroform was the almost universal anesthetic, very few are to be found in that section who use chloroform in preference to ether for ordinary surgical purposes. Should a surgeon in our vicinity meet with a fatal accident under the former agent, he would be placed in an embarrassing position in the eyes of both the profession and the public, and, under ordinary circumstances, would get little sympathy from either. Very likely he would be subjected to some such catechism as the following:

"Doctor, your patient died under chloroform?"

"Yes, sir."

"Were you not aware that chloroform is more dangerous than ether?"

"Yes, sir."

"Then why did you use it?"

In an ether community it would not be sufficient to say, in answer to this last question, that chloroform is pleasanter or cheaper, or acts more quickly or in smaller quantity, or that it is used in England. All these points would avail nothing in comparison with the one question of safety. That is the keystone to the arch, and all other considerations are of secondary importance.

In the Northern, Middle, and Western States of this country ether is the principal agent used in ordinary surgical practice, while in the Southern States chloroform has the preference.[2] In foreign countries the latter agent is probably the favorite anesthetic in a majority of cases. The fact that practical surgical anesthesia by means of sulphuric ether had its birth and origin in Boston has nothing whatever to do with its popularity in this country. Our community is a conservative one, and in this matter the foundation of its faith and preferences is safety.

It is impossible, nor is it necessary to state in exact terms the relative safety of chloroform and ether. That there is a decided difference between the two drugs in this respect cannot be doubted by any candid observer, and reader of the literature of the subject. It is true that many practitioners of large experience have never met with an accident in the use of chloroform. It is also true that over four hundred deaths from this agent have been placed upon record, and no one can form any correct idea of the number of unrecorded fatalities. In 1889, Dr. Lawrence Trumbull[3] placed the latter at one hundred cases, which cannot be considered an extravagant estimate. No such record is claimed against ether by even its strongest opponents. The fatalities from ether at that time on record amounted to about sixty. Cheever[4] says that the largest and most reliable statistics indicate that ether is about ten times as safe as chloroform.

Much has been said and written as to the exact method in which death takes place under the influence of these two drugs. The common opinion is, that ether kills by asphyxia, and chloroform by cardiac paralysis. The Hyderabad Commissions, of which Dr. T. Lauder Brunton, and Surgeon-Major Lawrie were members, declared in their report, that chloroform "never causes sudden death from stoppage of the heart." Drs. Wood and Hare claim that chloroform is a cardiac paralyzant. In some cases the influence is most felt upon the respiratory centres, and in others upon the cardiac. "So far as practical medicine is concerned it makes little difference, whether the heart stops just before or just after the respiration."[5]

The accumulated testimony of the past fifty years tends to prove conclusively, that ether kills slowly, chloroform quickly; that ether kills by asphyxia, chloroform by cardiac paralysis; that ether gives plenty of warning, chloroform often none whatever; that ether is safer in healthy and strong people than in the weak and prostrated; but that chloroform is nearly as fatal in the vigorous as in the debilitated. Ether does not demand any special skill in its administration; chloroform does. Proper treatment easily and effectually overcomes the unfavorable symptoms from ether; treatment oftentimes does no good whatever in accidents from chloroform. In short, ether is the safest general anesthetic known; chloroform is not.

In view of these facts the burden of proof in justification of the use of chloroform rests with the operator. Although plenty of authority can be found in favor of the stronger agent, yet the fatalities take place just the same as ever, in spite of all the precautions which it is possible to take. Ringer says there are no conditions of age or health which forbid the use of chloroform as an anesthetic, provided due care be observed in its administration.[6] The Hyderabad Commissions claim the same immunity from danger. In the writer's opinion, such an assertion cannot be truthfully made of any known anesthetic, not even of sulphuric ether itself, which is the safest of them all.

Those who claim that the fatal results of chloroform are due to want of care and skill in its administration are casting reflections upon such men as Sir James Y. Simpson, the father of chloroform anesthesia, Erichsen, Billroth, Volkmann, Syme, Hunter McGuire, James Wood, Willard Parker, F. H. Hamilton, Alden March, Moses Gunn, W. W. Dawson, and many other skilful and reliable members of our profession.[7] An agent, which is not safe in the hands of such men, is certainly not the most suitable one to be put into the hands of the rank and file of medical practitioners.

A strong, healthly young man desires to have a finger amputated or a felon opened. He breathes a few whiffs of chloroform, and without any warning stops breathing, and is dead. No operation has been done which could have produced any shock. Such accidents have also occurred in the dentist's chair many times. An autopsy is made, and perhaps some slight change in color is found in the pericardium, or capsule of one kidney, or some other variation which, under ordinary circumstances would not have been noticed. That is all that can be found to account for the preventable catastrophe. Do such things occur under ether? If so, they are not put upon record, nor have they been oberved in the larger hospitals in this part of the country. It is not quite safe to give ether under all circumstances; but the unfavorable conditions are apparent to any one familiar with anesthetics, and can be provided for or guarded against. There is nothing obscure, or irregular, or fulminating in its action, as in its more powerful rival.

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[1] Read at the Meeting of the American Surgical Association, in New York, May 30, 1895.

[2] Wood's Reference Handbook of Medical Science.

[3] Artificial Anesthesia, 1889.

[4] Lectures on Surgery, p. 27.

[5] Medical News, February 22, 1890.

[6] Willard and Adler on Anesthetics.

[7] Therapeutic Gazette, August and September, 1890. Dr. G. Archie Stockwell, Detroit, Mich.

Daily experience with a drug, under all sorts and conditions of circumstances in the care of the sick and wounded for over a quarter of a century without meeting with any serious mishap, gives one more confidence in that agent than all the reports of learned societies or so-called national commissions. There are not a few in our midst who have had just this experience, and they require neither argument nor statistics to convince them beyond the shadow of a doubt of the superiority of ether over chloroform for general anesthetic purposes. And yet, for various reasons the latter agent will doubtless continue to be used by a large number of practitioners in different parts of the world for all time. It is pleasanter to inhale, quicker in its action, more lasting in its effects, less apt to be followed by nausea and vomiting, cheaper, less bulky, and not inflammable. Moreover, the accidents from chloroform are not sufficiently common to create that fear and distrust in the mind of the profession and of the public which demands its abandonment in surgical practice. Personal preference and prejudice, freedom from accidents in the immediate vicinity, and perhaps national pride, are factors which may determine not a few in their choice of an anesthetic.

The truth of this whole matter seems to be, that sulphuric ether, under ordinary conditions, is as safe as can reasonably be expected of any agent which produces such beneficent results; that chloroform is safe in a vast majority of instances, but that fatal accidents do occasionally occur under circumstances in which they were not anticipated, and that these accidents can neither be foreseen, prevented nor remedied; that under rare conditions no known anesthetic is entirely free from danger; that the greater comparative safety of sulphuric ether is slowly being recognized and hence that its use is gradually displacing, to a certain extent, its more potent and more dangerous rival.

The writer submits that this question of the relative safety of the two agents under consideration, ether and chloroform, is decided as firmly and as surely in favor of the former by an intelligent and searching experience of half a century as it is possible to decide any scientific point in the affairs pertaining to human life.

In spite of all that can be said in favor of ether and against chloroform, the fact remains, however, that there are a comparatively few conditions under which the latter is the preferable anesthetic, and it is the main object of this paper to draw attention to these cases. In a general way it may be said, that all operations liable to be attended with spasm of the glottis, edema of the larynx or lungs, profuse secretion of fluids in the air-passages and tonic contraction of the muscles of respiration, can be done under the influence of chloroform with more safety and satisfaction than under ether. Chloroform does not obstruct respiration to the extent that ether does. It does not irritate the mucous membranes, nor increase the secretion of mucus, nor produce as much spasmodic action of the muscles of the throat and chest, as does ether. For these reasons it is superior, as an anesthetic, in the following diseases and conditions:

All cases requiring tracheotomy and esophagotomy, as membranous croup; laryngitis, acute, chronic, traumatic, specific or tubercular; edema of larynx or glottis; malignant disease of throat and neck; deep cervical cellulitis; deep tumors of neck, as bronchocele; foreign bodies in air-passages; foreign bodies in esophagus; bronchitis in the aged; asthma.

Doubtless this list may be extended by the gentlemen present. I speak principally of those affections in which I have had personal experience. A consideration of its use in obstetrics is omitted for obvious reasons.

Every one knows the difficulty, and oftentimes danger, met with in trying to etherize a child suffering from membranous or diphtheritic croup. The irritation of the drug produces spasm of the muscles of the throat, or a free secretion of mucus, breathing is more or less obstructed, the color becomes livid, the veins distended, and, if strong enough, the child struggles in all the agony of suffocation. Under these circumstances a hasty tracheotomy must be performed with the attendant risk of hemorrhage and strangulation. Chloroform produces few if any of these symptoms. Given carefully, the respiration is not impeded, the child's quiet is not disturbed, and the operation may be completed in a deliberate and careful manner. I have performed a good many tracheotomies under chloroform and have never met with a mishap that could be justly laid to the drug. I can speak confidently and strongly upon this point, and from the best of all teachers, experience.

The same remarks will apply with equal emphasis to all cases of acute or chronic stenosis of the larynx, from whatever cause. Contusions, lacerations and fractures of the larynx are very likely to be followed by dyspnea, which in some instances may require tracheal incision. A few years ago a man in middle life was admitted to the Boston City Hospital, who had injured his throat a week before by his efforts to push down a bone which he supposed had become lodged. He could swallow only liquids and those with great difficulty. The dyspnea was so pronounced that he could not lie down for any length of time, and he exhibited that peculiar restlessness which is so marked a feature in all cases of laryngeal stenosis. An examination by the laryngoscopist revealed an abscess in the region of the epiglottis, attended by extensive induration in the immediate vicinity. Tracheotomy was performed very satisfactorily indeed under partial chloroform anesthesia. The respiration was not disturbed in the least by the drug. Ether would have almost certainly aggravated the dyspnea, thereby complicating the operation and perhaps diminishing his chance for recovery. The patient got well.

Deep cellulitis of the neck, although not a very common affection, yet is a very serious one, sometimes terminating fatally. It may be dangerous by reason of sepsis, of edema of the glottis and by suffocation from a rupture of the abscess into the throat. I have known of fatal results from all of these causes. The treatment to be effectual must be early and radical and consists in making a free opening into the centre of the diseased tissues. The importance of the structures involved requires that this operation shall be done carefully and deliberately. Pressure upon the recurrent laryngeal nerves and other structures is very apt to produce spasm of the glottis and impeded respiration. This condition of affairs is much aggravated by the irritating effects of sulphuric ether, but not by chloroform. Hence the latter is the better anesthetic for these cases.

A man was under my care a few years ago suffering from an attack of deep and extensive cellulitis of the front and both sides of the neck. Through a misunderstanding he was given ether preparatory to an operation; when partially under its influence the breathing stopped, the face became deeply cyanozed and death from suffocation seemed imminent. This untoward result was averted for the time by an immediate tracheotomy, forcible inflation of the lungs through a catheter thereby expelling the free fluids, and artificial respiration. He gradually failed, and died the next day from shock and exhaustion. Judging from the usual effects of chloroform under these circumstances, it is fair to suppose that the shock of the operation would have been much less under its influence, that tracheotomy might have been avoided and hence that his chances for recovery would have been increased, notwithstanding the profound prostration resulting from the disease itself.

I was recently called to the hospital in the night to see a man just admitted with this affection. The dyspnea was severe, attended by paroxysms that threatened serious consequences. A deep collection of pus was evacuated by the Hilton method, under chloroform, with the greatest satisfaction to both patient and surgeon.

Many years ago I was requested by one of my colleagues, Dr. W. H. Thorndike, to administer ether to an old gentleman preparatory to tracheotomy for malignant disease of the throat at the base of the tongue. The effects of the anesthetic were extremely distressing. However carefully given, however much diluted with air, the vapor produced the most violent spasm of the glottis, rendering respiration entirely impossible. The operation was finally done without any anesthesia, and, as may be supposed, with a good deal of suffering to the patient.

This case forms a striking contrast to that of a woman who was under my care some years later for malignant disease of the deep glands of the neck. Constant and severe dyspnea resulting from pressure, presumably upon the recurrent laryngeal nerves, demanded tracheotomy. The operation was done under chloroform with great ease and with perfect relief to the patient. It would not be difficult to believe that ether would have acted as unfavorably in the latter as in the former case.

Spasm of the glottis, with impeded respiration, is peculiarly liable to occur in patients with foreign bodies in the air-passages or in the esophagus. Operations for their removal generally require time and careful manipulation. They cannot be done hastily, as can an emergency tracheotomy for stenosis of the larynx, and, therefore, it is essential to use the anesthetic that will cause the least disturbance to the patient. There can be no reasonable doubt that in a majority of cases chloroform is preferable to ether under these circumstances. The writer once removed a bean from the lower end of the trachea by incision, successfully. The child was in collapse at the time of operation, and required but little chloroform to keep her still. She recovered. Ether was given to another child in the hospital many years ago for the purpose of opening the trachea to remove a piece of a match, with a fatal termination. These cases require very gentle handling in every way, and the amount of anesthetic, as well as the kind, is of very great importance.

Chloroform has been used by the writer in three cases of esophagotomy with much satisfaction. In a case of malignant disease, the esophagus was opened on the left side of the neck in the usual way for the purpose of guiding a staff through the pouch above the stricture down into the stomach, upon which to pass a Symond's tube. Later it became necessary to do tracheotomy on this patient. Both operations were performed under chloroform without complication. This agent was used in the case of a man who had swallowed a plate of teeth which had lodged at the lower end of the gullet. It was removed through an incision in the neck, with no difficulty as regards the respiration. I also removed a copper cent from the esophagus of a child three-and-a-half years of age by incision under chloroform. The little girl speedily recovered. The action of the anesthetic in all of these cases was satisfactory in every way, and I have thus far seen no reason for using any other agent under similar circumstances.

The only unfortunate result I have had while using chloroform was that of an old lady suffering a good deal of dyspnea from a large goitre. At her request I made an effort to intube the larynx, leaving the question of extirpation to be decided later on. A little chloroform was inhaled without difficulty, but during my efforts to place the tube she gradually sank away, and died in a few minutes. I am inclined to lay this unfortunate result to her extreme prostration, which was necessarily increased by my manipulations in trying to introduce a tube into a narrow, displaced, tortuous larynx, rather than to the anesthetic. It would have been wiser to have let her alone. This is the only mishap I have ever had with chloroform.

Kocher, of Berne, has recently reported one thousand thyroidectomies for goitre. One death resulted from bronchitis following the administration of ether. There were no deaths from chloroform. He always begins the anesthesia with chloroform, and continues it with ether.[8]

Old people suffering from chronic bronchitis or edema of the air-passages are not good subjects for ether, as the irritation tends to increase the secretion, which occasionally becomes so profuse as to drown the patients in their own fluids. This accident is peculiarly liable to occur in heavy drinkers, in those suffering from chronic urinary disease (as stricture and its sequelæ), and in those profoundly prostrated by any serious affection (as strangulated hernia and malignant diseases). I once lost a patient in this manner when about to operate for a gangrenous inguinal hernia which had been strangulated a week. He took the ether well enough at first, but as the operation was about to begin, it was noticed that his respiration was obstructed by mucus, which increased with alarming rapidity even pouring out of his mouth and nose. He died in a few minutes. It is doubtful if chloroform would have had this untoward effect upon the bronchial secretions.

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[8] Boston Medical and Surgical Journal, May 23, 1893.

The statement has recently been made by some of the German surgeons,[9] that while the immediate danger from ether is much less than from chloroform, yet that the remote danger is greater by reason of the emphysema, bronchitis and broncho-pneumonia resulting from the anesthetic. This complication has been noticed too seldom in this vicinity to create suspicion or distrust. Before attributing these events to the drug, it would be well to carefully investigate all of the circumstances attending the patient, before, during, and after the operation. Not a few persons, especially in hospitals, get cold from exposure during this time, and occasionally it terminates fatally. While the accident is probably not as frequent as in the days of the spray, yet the custom of surrounding the patient with wet cloths is not quite free from danger. It is well known that a person gets cold more easily when asleep than while awake, and it is not unreasonable to suppose that the same rule may obtain during the sleep of ether and chloroform. At all events, until these factors are eliminated, it is evidently unwise to attribute these complications to the anesthetic.

Another fact to be borne in mind is the peculiar insensibility of the bronchial mucous membrane of elderly people to the presence of blood and other fluids during an operation, so that no warning is given till too late to be of any avail. Not a few cases of this sort have been saved only by an emergency tracheotomy and artificial respiration. These facts do not necessarily preclude the use of ether in these cases, but they teach us to be extremely careful in its administration.

The inflammable nature of sulphuric ether is always to be borne in mind, but in actual practice there are comparatively few cases in which the drug is contraindicated on this account. The statement has been made, that ignition has taken place at a distance of fifteen feet.[10] It is difficult to understand how such an accident could happen, unless an immense volume of the vapor was allowed to fall from a height upon the flame. In the accident-room at the City Hospital in Boston, most of the night surgery for many years has been done under a six-light chandelier, the inhaler being not over three feet distant. No such accident has ever occurred in that institution. The vapor of ether, being heavier than air, falls more freely than it rises, and hence is not likely to ignite under ordinary circumstances with the flame overhead. I have seen the ether sponge ignited a few times by the actual cautery, but only when it was brought within at least a foot of the inhaler. The only harm resulting was a slight singeing of the eyebrows. These accidents were all preventable, and do not by any means preclude the use of ether as the anesthetic in these cases.

It may be said that chloroform must be more dangerous than ether in the class of cases under consideration, from the fact that these patients are usually weakened and debilitated by the disease, and hence more susceptible to heart failure. Experience gives little support to this supposition. The most characteristic feature of the danger from chloroform is the fact, that about forty per cent. of the accidents occur in apparently vigorous, healthy people about to undergo some minor operation, as the pulling of a tooth, incision of a felon, etc.,[11] and that usually death takes place during the early stages of the anesthesia, oftentimes within a very few minutes, and before complete insensibility is reached. And herein lies the danger of using this agent in minor surgery. This fact should be especially borne in mind by those practitioners who use chloroform in minor operations, but would not think of resorting to it in capital cases.

In conclusion, allow me to submit for your consideration the opinion, that chloroform is a more satisfactory anesthetic than ether for operations liable to be complicated by difficult or suspended respiration; that in those cases it is reasonably safe, and that when carefully administered, it may be confidently recommended to the profession for this particular kind of surgical work.

THE POST-MORTEM SIGNS OF DROWNING.[1]

BY G. DE N. HOUGH, M.D., NEW BEDFORD, MASS.

(Concluded from No. 17, p. 412.)

THE heart should be opened *in situ* for the purpose of determining the condition of the blood in its cavities (whether clotted or fluid) as well as the relative amounts of blood in the two sides of the heart, and whether the color of blood differs in the two sides. Usually we find the blood decidedly fluid, free from clots, the right side containing more blood than the left, and, according to Barlerin, of a darker color.

For more than a century almost all authors have agreed that the blood of the drowned is strikingly fluid. Of course, we should not expect to find a strikingly fluid blood in those who merely die in the water but are not actually drowned; nor should we be surprised that advanced conditions of putrefaction bring about such chemical and physical changes that the blood no longer gives one an impression of unusual fluidity.

It has been ascertained that if a person takes sulphuric acid, aqua regia, or other caustic poison, and then completes the suicide by drowning, the blood will be clotted. Other chemical changes due to disease, for example, fever, may put the blood into such a condition that it will clot after drowning. We cannot, therefore, say from the presence of clots that the person was not drowned. On the other hand, we find a fluid condition of the blood after many other kinds of death, for example, hanging, strangulation, and all other modes of asphyxia; poisoning by illuminating gas and by some of the narcotics (especially opium); death by lightning or electricity in other forms; and, according to Paltauf, after any form of violent death. The blood of the drowned differs, however, from these other fluid bloods by its being actually diluted by water absorbed through the lungs during the process of drowning. The amount of water thus absorbed varies very much, according to the duration of the drowning (the amount of liquid that penetrates the lungs), the nature of the drowning fluid, and the condition of the lungs themselves.

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[9] Medical Record, May 25, 1895, p. 672.

[10] Wood's Reference Handbook of Medical Sciences, vol. i, p. 189.

[11] Wood's Handbook, p. 190.

[1] Read at the Annual Meeting of the Massachusetts Medico-Legal Society, June 11, 1895.

This diluted condition of the blood is particularly noticeable in the liver. Some authorities, indeed, claim to be able to determine from the condition of this organ alone that the person from whom it came was drowned. They say that if the liver of such a person be removed and laid upon an inclined plane, the amount of watery blood that oozes from it is so great as to permit the diagnosis to be made, and they compare such a liver to a sponge saturated with water. It is on account of this condition of the blood that wounds made post-mortem on the drowned will bleed so much and for so long a time.

In color the blood is dark cherry-red; in mass it is blackish or quite black. Some writers say it is darker in the right side of the heart and veins than in the left side and aorta.

After death from any sort of asphyxia, the right heart is usually comparatively full of blood. Of course, the extent to which the concommitant causes of death enter into the case will exert a modifying influence upon this sign. Then, again, inasmuch as the heart continues to beat after respiratory movements have ceased, it is possible that the last traces of blood received into the heart may sometimes be expelled. Emptiness of the right heart is, therefore, no proof that drowning was not the cause of death. If putrefaction is far advanced the heart will be found empty.

Hyperemia of the pulmonary artery and of the venæ cavæ are of the same significance and subject to the same conditions as the overloading of the right heart.

The experiments of Paltauf convinced him that the blood in the aorta and left heart was more dilute than that in other parts of the body, and, indeed, that dilution might occur here and not elsewhere. Barlerin, on the other hand, says that the blood in the aorta is thicker and redder than in the veins.

Lungs.— Before removing the lungs from the chest it is strongly advised by some authors that a ligature be tied below the larynx around the trachea to prevent the escape of any liquid contents of the air-passages. Immediately on opening the chest one is commonly struck by the great apparent size of the lungs. They do not collapse. The flat hand cannot, as usual, be laid in the space between the ribs and the surface of the lungs. They are even so distended that the imprints of the ribs are visible on their surface and sometimes they appear to push themselves out as distended intestines do on making a small abdominal incision. The anterior borders of the lungs meet or nearly meet. The heart is nearly or quite covered. The edges of the lobes are rounded. This condition is spoken of as ballooning of the lungs or hypervoluminosity, and is a very important sign of drowning. It is present in more than 90 per cent. of the cases, provided putrefaction is not far advanced. The cause of this ballooning is that, owing to the penetration of the drowning liquid into the bronchioles and alveoli and thence into the interstitial tissue, the lungs cannot collapse. In some cases, too, there may be enough secretion of mucus in the minute bronchi to obstruct them here and there, and thus assist in preventing the normal collapse. That this increase in size is not due to hyper-distention of the alveoli with air is demonstrated by the facts that the specific gravity of these lungs is greater than normal and that their absolute weight is increased.

There are certain other conditions than drowning which may produce a similar appearance of the lungs. These conditions are: large effusion in the pleural cavities forcing the lungs forward, emphysema, bronchopneumonia and capillary bronchitis; extreme degrees of acute edema of the lungs; and sometimes poisoning by charcoal or illuminating gas. None of these is likely to offer much difficulty in differentiation.

Distention of the lungs by gases of putrefaction can rarely, if ever, simulate this condition. It is much more common for the distention to disappear as putrefaction advances. It has been shown that the lungs of the drowned putrefy very rapidly as compared with other lungs, being reduced to a pulp at a time when the heart is still in such a condition that the integrity of the valves and the gross structure of the myocardium can be readily recognized. In very cold weather, and especially if the body is under ice, the fluid that distends the lungs may transude into the pleural cavities before putrefaction takes place, and the lungs will then be found collapsed rather than distended. Pleural adhesions, particularly if dense and extensive, will prevent this distention; hence sometimes one lung will be ballooned and the other collapsed. These hyper-voluminous lungs are of a flabby, doughy consistence and pit on pressure. They usually crepitate more or less on pressure or on section.

The color of the surface of the lungs is not uniform. We may say, in general, that on the anterior parts, on the rounded edges and towards the apices, the prevailing color is pale yellowish-red; elsewhere the tint is much darker. The lobulation is usually distinctly marked; and while each lobular area is pretty much of one tint, adjacent lobules may vary considerably, whence arises the marbled appearance of the lungs. The special tint of a lobule depends on the quantity of blood that it contains, and this again depends upon the amount of drowning fluid that has penetrated the lobule in question; the more drowning fluid the less blood and the lighter the color. In the paler lobules, and especially at the anterior edges of the lungs, one can see, through the pleura, distended alveoli, while in other parts and in the grayish-blue or dark reddish-violet lobules the alveoli are smaller and less distinct.

On the surface of the lungs we may also find extravasations of blood. These are of two sorts: (1) Regular subpleural ecchymoses, the so-called Tardieu's spots. These are rare, commoner in children than in adults and in those drowned in thick fluids than in those drowned in water. (2) Larger, paler spots, consisting of a mixture of blood and drowning fluid poured out under the pleura in consequence of the rupture of alveolar walls. These are liable to be confused with patches where the alveoli are merely full of the drowning liquid, and with patches where the pressure of the fingers has forced out a little air that was present in the alveoli, leaving behind the liquid that was there.

Besides the extravasations just mentioned, subpleural patches of emphysema are sometimes observed. This occurs most frequently in children, and is generally found at the edges and on the median surfaces of the lungs.

The contents of the air-tubes consist of froth, liquid, foreign substances that were suspended in the drowning liquid and matter from the stomach.

The froth is produced as follows: During the process of drowning a certain amount of liquid enters the air-passages. In consequence of the irritation produced by this liquid a little mucus is secreted. The powerful respiratory movements churn up this liquid and mucus with the air in the tubes and produce a fine-bubbled, whitish froth. The amount of this froth depends upon the force, frequency and number of the respiratory movements. It may fill completely the whole bronchial tree, the trachea and larynx, and even appear at the mouth and nose. On the other hand, very little may be formed, and it may be limited to the very small bronchial tubes.

The sooner the body is observed after death the better marked will this sign be. As time goes on, the fine bubbles will unite to larger ones, these in turn will collapse, and so a part of the froth will be converted to liquid. In consequence of the development of the gases of putrefaction and their pressure upon the lungs, the froth will be gradually forced out of the mouth. That which comes at first will be whitish, for it was formed in the larger tubes where there is no effusion of blood; then comes a rosy froth, rosy from the admixture of blood-coloring matter which comes from minute hemorrhagic foci in the very small bronchi; and finally the true froth is all gone, and there exudes from the mouth only a reddish or brownish, dirty, ill-smelling liquid containing perhaps a few bubbles of gas and in no way characteristic.

The real froth lasts in winter from three to five days, in summer not over fifty-five or sixty hours. If a body is removed from the water the froth disappears much more rapidly. In summer as short a time as two hours may suffice for it to disappear.

The great question in regard to this froth is whether it can in any way be distinguished from that which is found in the air-tubes after death from other forms of asphyxia; from poisoning by illuminating gas, by charcoal gas or by narcotics; from epilepsy; or from any disease associated with congestion or edema of the lungs. No unanimity of opinion exists on this question, which as far as I can ascertain has not yet been attacked in the way that one would suppose the most natural, namely, by comparative chemical analysis of the frothy liquids found under these various conditions. One would suppose that the froth of the drowned would contain very much more water than the froth produced under any other conditions.

As to liquids in the bronchi, observation and experiment have proven that the drowning liquid enters the air-passages and reaches even to the alveoli, many of which are filled with it; and further, that it passes between the epithelial cells of the alveoli and of the bronchi and gets into the lymph-spaces and lymph-vessels of the interstitial tissue. The quantity of liquid that thus enters the lungs varies, of course, with the number and force of the respiratory movements during the process of drowning. Chemical analysis has shown that the liquid in the air-passages of the drowned consists almost exclusively of the drowning fluid. With this is mixed a very little mucus, a still less amount of blood and some epithelium, with perhaps mere traces of edema fluid.

The liquid is not always found in the air-tubes of the drowned, for it may pass into the pleural cavity by transudation, it may be forced out of the nose and mouth by the pressure of the gases of putrefaction, and it may flow out after the body is removed from the water if the head is allowed to assume a dependent position.

Moreover, if a body is immersed after death, the liquid will get into the air-tubes. It is a question how far into the tubes the liquid can penetrate after death; certainly sometimes as far as the eighth division of the bronchi, and some writers say even into the alveoli. The latter is doubtful. The more deeply the body is immersed the more deeply it seems the fluid will penetrate.

Foreign substances, such as mud, sand, fragments of water-plants, etc., with the water, may enter into the air-tubes. They may enter after death. The deeper they are found, the less is the probability that their entrance took place post-mortem. How deeply they may go post-mortem is not yet definitely determined.

In the progress of the asphyxia vomiting often takes place. The vomited matter may be drawn into the air-tubes by a violent inspiratory effort. It is said that even after death, the contents of the stomach may get into the air-tubes.

As in any case of suffocation so in drowning, we usually find more or less injection of the mucous membrane of the bronchi and trachea. It varies from a few isolated dendritic patches to a tolerably uniform coloration of the whole mucous membrane. The shade of color is cinnabar red to vermilion, and differs distinctly from the dirty brownish-red of putrefaction. Frequently the injection is limited to the epiglottis and the bifurcation of the trachea, extending a little into the primary bronchi. Slight grades of injection are most distinctly seen between the cartilaginous rings and on the posterior wall of the trachea.

On section of a drowned lung, one is almost always first impressed by the large quantity of frothy liquid that seemingly exudes, spontaneously or on slight pressure, from every point of the cut surface. Careful examination, however, causes one to modify his first impression. If the body is quite fresh the tissue near the root of the lung and the upper lobe are more filled with fluid than other parts, and within any limited area differences in color, moisture and blood contents can be made out between neighboring lobules or groups of lobules, those which contain more moisture and less blood being paler than the others. On the whole, such a parenchyma is pale rather than congested, though here and there patches appear which are comparatively collapsed, dark-colored and loaded with blood.

Many of the alveoli contain liquid; some of them have ruptured and allowed the liquid to be extravasated into the surrounding tissue. The epithelium of many of the alveoli and minute bronchi is swollen by imbibition and often detached from the basement membrane. Some of these cells may have undergone granulo-fatty degeneration.

All parts of the parenchyma are infiltrated with the drowning fluid; but it is a noteworthy fact that if the whole or any part of a lung is adherent, we find the adherent portions comparatively dry. In edema of the lungs we find, on the contrary, if we find any difference between the adherent and non-adherent parts, that the adherent are most saturated with fluid.

Stomach.— There is no doubt that the drowning liquid enters the stomach by swallowing in greater or smaller quantity in most cases. The experiments of Liman, Hofmann, Lesser and others prove that liquid may also enter the stomach after death, carrying with it any suspended matters. The exact conditions for this have not yet been worked out. Liquid is not always found in the stomach of a drowned body, for it may transude, it may be forced out by the development of gases of putrefaction, and it may flow out in consequence of the position or manipulation of the body after withdrawal from the water. Of course, water may have been swallowed shortly before submersion. This objection can be met by an identification of the liquid found in the stomach with that in which drowning is supposed to have taken place, at least when the supposed drowning liquid is of such a character that a sane person would not drink it. This identification can often be made by chemical and microscopical examination; sometimes the odor of the liquid suffices.

The presence of food in the stomach interferes with the recognition of the presence of the drowning liquid (unless this should happen to be some peculiar fluid) although sometimes it forms a separate clear layer on the surface of the pultaceous food mass.

In the case of a new-born infant we must remember that, while yet in utero, movements of deglutition take place, and that similar movements may occur if the infant be born into a pool of amniotic fluid, blood and mucus as so frequently happens. Hence the presence of these substances in an infant's stomach is of no diagnostic value.

Some of the froth found in the air-passages may come up into the mouth and pharynx, and be swallowed. In such a case we will be likely to find air bubbles in the fluid contained in the stomach. Unless the body is fresh, the stomach free from food and containing a considerable quantity of fluid which can be demonstrated as identical with that in which drowning is supposed to have taken place, we can hardly lay very great stress upon this sign. Under these circumstances the fluid is cloudy from mucus and epithelium.

The mucous membrane of the stomach is usually, in fresh bodies, pale, as if water soaked. If much food is present, the membrane is likely to be rosy-red; sometimes, as in other kinds of asphyxia, it is injected or ecchymosed, as is also that of the intestine. In consequence of putrefaction it acquires a deep violet or brown color which is liable to be mistaken for the result of poison.

Intestine.— Drowning fluid may be found in the small intestine, especially in children. Liman says that this is purely mechanical. This subject has been thoroughly studied by Fagerlund whose conclusions are that: (1) The drowning fluid does not pass from stomach into intestine post-mortem unless very considerable pressure is brought to bear. (2) In a drowned person peristaltic action may carry liquid from the stomach into and along the intestine. This is more easy when the stomach is empty, and more common in prolonged drowning. This sign is then more important apparently than the presence of water in the stomach.

The spleen, kidneys and mesenteric veins are all gorged with blood, as in any case of asphyxia. This engorgement disappears as putrefaction progresses.

The position of the diaphragm and the condition of the urinary bladder are of no importance.

If we now have a particular case under examination, what conclusion can be drawn?

From our examination of the exterior we can say, "This body has been lying in the water," basing our opinion on the presence of more or less of the following signs:

(1) Peculiar rose-colored or bright-red suggillations.
(2) The order in which the parts have been affected by putrefaction.
(3) Rosy patches on the skin of the inner surfaces of the thighs and front of the thorax.
(4) Cutis anserina.
(5) Retraction of penis, scrotum and nipple.
(6) The extent of subcutaneous emphysema.
(7) The condition of the epidermis, particularly of the hands and feet, knees and elbows.
(8) The condition of the nails and hair.
(9) The appearance of the various parts of the eyes: (1) The so-called fish-like expression, (2) the phlyctenular eminences and cloudy appearance of the cornea, (3) the sclerotic edema, (4) the change of color of the iris.
(10) Abrasions about the bridge of the nose.
(11) Sand, mud, fragments of water-plants, etc., in the nostrils and mouth.
(12) Mud, etc., under the nails.
(13) Fragments of plants, etc., grasped in the hands.
(14) Erosions of various parts of the body.
(15) A fine-bubbled froth at the mouth and nose.

To these will perhaps be added after we have made our internal examination:

(16) Edema of ary-epiglottic folds.
(17) Fluid in the larger air-tubes (and in this fluid very likely foreign particles may be found suspended).
(18) Fluid in the stomach.

Now among all these signs there are none that are incompatible with the cause of death being drowning, and a few of them suggest this quite strongly, or at least suggest that the person was alive when he went into the water. These are —

(1) Cutis anserina.
(2) Retraction of penis, scrotum and nipple.
(3) Fragments of water-weeds, etc., grasped in the hands.
(4) Froth at the mouth and nose.

In order to be able to say positively, "This person was drowned," a careful consideration of all the internal organs, and in some cases of extraneous circumstances, must also be made.

(1) It appears to me that the absence of any traces of external violence is a very important matter; and if such traces exist, the determination of whether they were inflicted before or after death, and whether they are sufficient to account for the death.

(2) We must consider the general indications of asphyxia; by which I refer to the congestion of solid viscera, the overloading of the whole venous system, the injections and ecchymoses of mucous membranes, the fluid condition of the blood, and the presence of subpleural and subpericardial ecchymoses. In proportion as more of these are present, so much the more positive will our diagnosis be, for we must remember that drowning pure and simple is but one form of asphyxia.

(3) Evidence of chronic or acute disease must not be neglected, for by the presence of such disease the resisting power of our subject will be diminished, and he will require (if I may use an Irishism) less drowning to kill him, and consequently the signs will be less pronounced. Such disease, moreover, may furnish a motive for suicide.

(4) Finally, we have certain signs more or less special to drowning which, taken in connection with the signs already referred to, make our diagnosis in many cases positive. Some, perhaps all, of these signs, yet require investigation to thoroughly determine the limits to which their value is confined; and I shall take the liberty, even in this assemblage of experts, of calling some attention to this part of the subject.

(1) Bilateral lacerations of the sterno-cleido mastoidei and pectorales majores. These are mentioned by Paltauf only; more observations are needed.

(2) Liquid in the pleural cavities; lesions to which this might be due being absent. Comparative analysis ought to be made of this fluid, of pleural effusions, and of the liquid that collects in the pleural cavities in consequence of putrefaction.

(3) A fine-bubbled, watery, whitish or rosy froth, non-adherent to the walls of the air-passages, in which it is found. Inasmuch as the most eminent authorities are not agreed that this can, by any physical characteristics, be distinguished from the similar froth found in other forms of suffocation and in certain diseases, let us make comparative analyses of all these froths and determine, if we can, any chemical differences that exist between them.

(4) The presence of the drowning fluid in the very small bronchi and the alveoli, with or without suspended foreign substances. The question still at issue here is, How deeply can fluids penetrate into the bronchi after death?

(5) An infiltration of the pulmonary parenchyma with fluid. The presence of pleuritic adhesions will enable us to distinguish this condition from edema in many cases.

(6) Subpleural extravasations of the drowning fluid mixed with a little blood.

(7) Increase in the volume of the lungs, associated with increase of absolute weight, increase of specific gravity and a peculiar doughy consistence.

(8) Demonstration of hemorrhagic foci where the bronchioles enter the alveoli.

(9) Presence of water in the stomach. The very fact that this may enter after death is still contested, and we only know in regard to the conditions necessary for such entrance that it is favored by pressure, for example, by the body being sunk deep in the water.

(10) Water in the intestine. Unless great pressure is brought to bear on the body, water will not pass from the stomach to the intestine. How much pressure is required and the influence exerted by putrefaction upon this pressure, we have yet to learn.

(11) A special and extreme hydremia of the liver. I cannot believe that it accords with the true scientific spirit to ridicule, as some authors do, the statements of Lacassagne on this point. Careful comparison of the condition in this respect, of livers of persons dead of all sorts of violent deaths would be much more to the point.

(12) An actual dilution of the blood with the drowning liquid.

In conclusion, gentlemen, I wish to say that I have refrained from enumerating my sources of information, with the object of shortening the time required for the reading of my paper. I shall be pleased to give any who wish to consult them all the references at my disposal.

Clinical Department.

A CASE OF ABDOMINAL NEPHRECTOMY FOR CYSTIC KIDNEY; RECOVERY.

BY CHARLES A. ATWOOD, M.D., TAUNTON, MASS.

J. R., a tailor, age twenty-seven years, a native of Scotland, received an injury to the right side eight years ago while playing football. He was at once taken to the infirmary at Edinburgh, Scotland; where he remained six weeks suffering from pain in right lumbar region and profuse hematuria. He has been in this country about five years, and has had at irregular intervals attacks of pain and hematuria.

In February, 1894, he complained of loss of appetite and indefinite symptoms, was pale and emaciated, but noticed that his abdomen was much swollen. In this month he was aspirated, and over one gallon of clear, serous, ascitic fluid withdrawn. The fluid was free in the abdominal cavity. There was no pain whatever. Examination of the urine at this time showed it to be large in amount, color pale and contained considerable abnormal blood and pus. After the aspiration he regained strength and was able to take some exercise. The ascites reappeared, but not to as great an extent as before. He felt better. In a few weeks he returned to Scotland and remained until September, 1894.

In the meanwhile all the abdominal enlargements had disappeared. He gained appetite and strength and returned to this country looking fairly well and expressing himself as never having been in as good health in his life.

In May, 1895, the patient first presented himself at my office, complaining of pain and soreness in right flank. He was ordered to his home at once, as trouble with the right kidney was suspected. This advice he did not follow; but on the 17th of May I was called to his house, and found him nearly pulseless and in horrible pain, and that he was passing a large amount of bloody urine. The pain was relieved by hypodermics of morphia.

May 18, 1895. Had to be kept under the influence of morphia all the time. Some sleep. Constant vomiting. Pulse 140, temperature 100°. Has retained no nourishment. Urine contained large amount of blood and pus, reaction acid, slight trace of albumin, which could be all accounted for by the amount of blood. The patient to start with, was extremely thin, weak and emaciated. In fact, I do not think I ever saw a more ill-nourished man in my life.

May 19th. Temperature 101°, pulse 140. Vomited nearly all food. Urine same in appearance. Morphia given for pain.

May 20th to 23d. No great improvement.

May 24th. Pulse 120. Slept some. Urine same. Less pain. Retained some bovinine, milk and lime-water.

May 25th. Pulse 120. Slept. Urine same. More comfortable. No vomiting. Physical examination was now made of the abdomen. Flatness occupying the whole upper right quadrant of the abdomen was detected by percussion. This area extended a slight distance on the left side and half a hand's breadth below a horizontal line drawn around the body on a level with the umbilicus. Fluctuation was easily demonstrated.

Patient was ordered liquid diet and the following mixture: Digitalis three drops, strophanthus two drops, nitro-glycerine one-hundredth of a grain every three hours. From this date to June 6th no great change. June 6th Dr. W. S. Robinson, of Taunton, was called in consultation. The advisability of an operation was considered, but the patient's condition forbade all idea of its immediate execution although it was thought to be the only feasible method of giving him a prospect of permanent relief.

June 7th. Temperature normal, pulse 120. Urine nearly clear in color, but containing some shreds of fibrinous material. Takes liquid nourishment freely and feels better.

June 7th to 20th. Pulse ranged from 110 to 120. Sleeps well. Takes semi-solids and is free from pain. Able to sit up on the 20th and eat solid food. June 20th Dr. W. S. Robinson was again called in consultation. The man's condition was so much improved that he was given his choice of an operation as being his only chance and that a very poor one.

June 24th. His condition has been one of gradual improvement. Patient made up his mind to have operation performed, and I took him to the Morton Hospital. He was barely able to walk with my assistance a few yards from my carriage to the hospital door. Prepared for operation. Temperature 98.6°, pulse 88, respiration 30. Slept well.

June 25th. Temperature 98.6°. Slept fairly well.

June 26th. Temperature normal. Patient was etherized at 10.15 A. M. by Dr. Arthur V. Goss, of Taunton Lunatic Hospital Staff, and much of the success of the operation is due to his care and skill in the administration of the anesthetic. I received much valuable aid from Dr. W. S. Robinson who very materially assisted me during the operation.

The patient being anesthetized a diagonal incision was made a hand's breadth to the outer side of the right rectus abdominalis muscle, extending from the free border of the ribs to the crest of the ilium and measuring seven inches in length. The incision was parallel to the fibres of the internal oblique muscle. The peritoneum was opened in the usual manner when a large cyst presented. The ascending colon was displaced to the median line and the meso-colon dissected through on its outer border. Great difficulty was found in separating the cyst, which was very thin and firmly adherent to the mesentery and small intestines, and it was only by repeated ligating and cutting between ligatures that the intestines could be separated from the sack. It seemed at one time as though the operation would have to be abandoned. At length the adhesions having been completely broken down, the cystic mass was lifted out of the wound. The pedicle of the cyst was made tense and the renal vessels ligated by pedicle silk. The ureter was divided. Its cut ends were ligated with silk and seared with the actual cautery. Its distal end was dropped back into the abdominal cavity. The abdomen was wiped dry with sterile sponges and sewed up tight without drainage. The wound was united by deep silkworm-gut sutures and a superficial silk skin suture. Baked gauze dressing and swathe applied. Operation completed and patient put to bed at 12.30 P. M. He recovered from ether at 1.15 P. M. Evening temperature 99.6°, pulse 120, respiration 17. Slight nausea.

June 27th. Morning temperature 100.6°, pulse 124, respiration 18. At 1 P. M. calomel ordered, one grain every hour till six grains or there is defecation, and followed by citrate of magnesia one ounce every hour until free defecation, or one bottle has been taken. During the day, however, the pulse went up suddenly to 160 and over, and at times could not be counted. Had nausea and vomiting. Ordered one-thirtieth of a grain of strychnia sulphate in brandy, given hypodermically every hour till pulse came down to 100, or there is evidence of muscular twitching. Digitalis was also given. Urinated eleven ounces.

June 28th. Morning temperature 101.2°, pulse 135. Urine eight ounces. No defecation. Enemata of turpentine, egg and water given with no result. Followed later by high rectal enema with no result. Vomited. Temperature at 4 P. M. 101.2°, pulse 165, respiration 25. The vomiting now became continuous. Gave one-thirtieth of a grain of strychnia every half-hour. Gave champagne by the mouth, one drachm every half-hour. At 11 P. M. no improvement. Twitching of the muscles noticed. Ordered strychnia omitted. Patient very restless. There is no abdominal distention or pain. The patient is in my opinion still suffering from nervous shock. Strychnia does not seem to meet the indications, and does not steady the pulse. I ordered one-quarter of a grain of morphia, with atropia, every three hours if awake and restless. The morphia was given twice. Patient slept nearly all night.

June 29th. Temperature 100°, pulse 122, respiration 18. Magnesia sulphate again tried, but again caused vomiting. High enema given without any result. At 12 M. one drachm of compound liquorice powder was given. 1 P. M. milk and lime-water alternating with beef-juice, one drachm given every hour. At 7 P. M. vomited, and was much nauseated. Omitted nourishment. Was very restless. One-quarter grain morphia given. Slept five hours. Flatus passed by rectum. Urinated eighteen and one-half ounces.

June 30th. Temperature 100°, pulse 124, respiration 14. No nausea. One drachm of peptonized milk and one drachm of champagne given every hour. Slight subsultus of the hands noticed. Pulse at my visit was of good character. No defecation. Had comfortable night.

July 1st. Had nausea, and at 1.30 A. M. vomited. Very restless. Complained of pain in right side. One-quarter of a grain of morphia given with relief. Temperature 101°, pulse 139, respiration 18. No nausea or vomiting during the day. Retained liquids in teaspoonful doses, and champagne one drachm hourly. Had a comfortable night. The urine was examined by the pathologist. Albumin absent; a few hyaline and granular casts found.

July 2d. Morning temperature 98.4°, pulse 135, respiration 20; pulse very weak. Peptonized milk, two drachms, and champagne, two drachms, given every two hours. No nausea, no vomiting.

July 3d. Morning temperature 100°, pulse 140, respiration 18. Nutritive enema consisting of peptonized milk, whiskey and bovinine, three ounces given every three hours in addition to other nourishment. Patient was turned on his side. During day a turpentine enema was given, resulting in a large, loose defecation.

July 4th. Temperature 99.2°, pulse 145, respiration 16. Dressing done; superficial stitches removed; wound looked well with the exception of few superficial stitch-abscesses. In afternoon patient had some abdominal pain; nauseated and vomited; nourishment omitted. He was delirious during the night.

July 5th. Flatus passed by rectum. Fair amount of urine. Pulse averaged about 140.

July 6th. Pulse 140. Slept at intervals. Took peptonized milk and beef-tea, two drachms every two hours; half an ounce of champagne every three hours. Flatus by rectum. Thirty ounces of urine in twenty-four hours.

July 7th. Pulse averaged about 140. Peptonized milk, coffee and malted milk were given in small quantities. Complained of some pain in the side. During night was delirious. Morphia given. Passed comfortable night.

July 8th. Temperature 102.2°, pulse 140, respiration 35. Dressing done. All stitches removed; several stitch-abscesses. Baked gauze dressing applied. No nausea. Given four ounces of liquid nourishment every two hours. Pain in the side. Was delirious at night. No vomiting. One-quarter of a grain of morphia given to quiet him. Had several hours' sleep.

July 9th. Wound looked well. Had large semi-solid defecation. Was very nervous and delirious.

July 10th. Temperature 100.6°, pulse 130, respiration 28. Two defecations. Wound looks well. Some sleep. Six ounces of liquid food given every two to three hours — egg-nog, broths, malted milk, peptonized milk, tea and coffee. Eighteen ounces of urine voided in twenty-four hours.

July 11th. Morning temperature 99.4°, pulse 118. Slept fairly well. Vomited at 2 A. M. Retained a fair amount of liquid nourishment during the day.

July 12th. Temperature 98.6°, pulse 120, respiration 18. Omit rectal feeding for the first time, if there is no vomiting. If pulse is below 120, omit hypodermics of digitalis and strychnia which have been given twice a day. Eight ounces of liquid diet was ordered every two and a half hours. Evening temperature 99.8°, pulse 116.

July 13th. Several copious semi-solids defecations. Slept about six hours. Urine normal in color.

July 14th. Temperature 98.7°, pulse 100. Dressing done. Wound healed. No abdominal tenderness. All nourishment retained.

July 15th. Ate soft toast and dropped eggs in addition to liquid food. Had a good day.

July 16th. Temperature normal. Semi-solids given. Champagne, which has been given at intervals of two or three hours, omitted, and one ounce of sherry wine given four times a day.

July 17th. Allowed steak. Temperature normal. Bowels moved.

July 19th. Measured for abdominal belt. Patient convalescent, and will be discharged from hospital in a few days.

I here append a photograph of the cyst, which was removed June 26, 1895.

The pathologist, Dr. F. A. Hubbard, made the following report: "Case of J. R. Cyst weighing four and one-half pounds, growing from the kidney, which was practically obliterated — only a few trabeculæ and a thin wall of kidney tissue was left, in thickness one-half to one-and-one-half centimetres. Contents of cyst: a dark, albuminous fluid, watery and containing a quantity of muco-pus. Diagnosis, cyst of kidney."

I here want to thank in terms of the highest praise the matron, Miss Ella Sears, and all the nurses of the Morton Hospital, for their hearty co-operation and untiring zeal and care in this case.

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Medical Progress.

REPORT ON GYNECOLOGY.

BY F. H. DAVENPORT, M.D.

THE CAUSES OF THE NORMAL AND PATHOLOGICAL POSITIONS OF THE UTERUS.

A. Mackenrodt,[1] in this interesting article, gives the results of his investigations as to the cause of the normal and pathological positions of the uterus. He gives the views of a large number of well-known authors and writers, which differ widely, many considering the round and broad ligaments, others the peritoneum, others the harmonious working of the retractors of the uterus and the round and vesico-uterine ligaments as the cause of the normal position. Still others deny that the ligaments have any influence in holding the normal uterus, and only come into play when pathologically affected. Emmet considers the pelvic connective tissue an important factor, and Ziegenspeck and Winckel are of the opinion that the pelvic vessels play an important rôle.

Mackenrodt from observation on the living subject and direct experiment has come to the conclusion that the round ligaments have nothing to do with holding the uterus forward, nor have the broad ligaments as far as they are inserted into the sides of the *body* of the uterus.

The cause of the antevesio-flexion of the fetal uterus depends upon the fact that it is crowded into the pelvis, that the long, firm neck is tightly held in the pelvic structures, while the free body is exposed to the abdominal pressure, which mainly comes upon the posterior wall.

With the beginning of the extra-uterine life other influences come into play. The varying conditions of bladder and rectum, respiration and other causes of intra-abdominal pressure are at work. Again, the pelvis becomes more roomy and the corpus uteri grows out of proportion to the cervix. While the uterine body admits of considerable motion, the cervix is held firmly in the position in which it developed, namely, curved, with the concavity directed forwards by the pelvic fascia, which sends strong bands to the cervix and vagina.

The normal anteversio-flexion is the result of a bending of the neck in which the angle of flexion lies, the body being straight and only following the direction of the upper part of the cervix.

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[1] Archiv. für Gyn., vol. xlviii, 1894.

It is not held in anteversion by its ligaments, but is passive, and follows the direction given it by the upper portion of the neck and is held in its position by its own weight and the intra-abdominal pressure.

It follows from this that the cause of the displacements of the uterus is to be sought in changes in the supports of the uterus or the walls of the uterus itself. Loss of tone in the ligaments which surround the cervix, associated with atrophy of them and the pelvic muscles generally, and pathological changes in the structure of the uterine walls are the leading factors.

The author then gives more in detail the special causes of the various displacements and dislocations to which the uterus is liable.

OVARIAN RESECTION.

Matthaei[2] reports six cases from the Berliner Klinik in which laparotomy was performed on account of large ovarian tumors of one side. At the operation it was found that at the same time there was partial disease of the other side. In these six cases the second ovary was not extirpated, but the diseased tissues removed and the ovary sutured. The ages of the patients varied from eighteen to thirty-five. Five of the six were married. All these conceived after the operation and bore living children.

Matthaei advocates resection of the ovary when it contains retention cysts too large or too numerous to be treated by ignipuncture; also in case of small dermoids, and, under great precautions, in proliferating glandular cystomata of small size. The ovary should be removed, however, in all cases if the women are near the menopause or if there is malignant disease or the slightest suspicion of it.

BACTERIOLOGICAL INVESTIGATIONS CONCERNING DISINFECTION OF THE HANDS.

Reinicke[3] in this article describes a series of very exhaustive experiments as to the value of the present methods of rendering the hands surgically clean. He gives very minute details as to the mode of conducting these experiments which may be epitomized as follows:

The hands are first infected with a pure culture of most virulent germs, which are allowed to dry on for an hour. A control culture is then taken, followed by mechanical cleaning with nail instrument. Then follows the thorough disinfection by one of the below-mentioned methods, after which a culture is taken to determine the degree of asepsis which has been attained.

The various methods of disinfection used were as follows:

(1) Washing with warm water and soap, with vigorous use of brush.

(2) The same, with the addition of sand.

(3) Washing with warm water and green soap, then scrubbing with carbolic acid.

(4) The same, substituting lysol for carbolic acid.

(5) The same with trikresol.

(6) Corrosive sublimate used in several ways.

(7) Chlorine water.

(8) Soap and water, permanganate of potash and oxalic acid.

Although the results by these different methods varied, in none was there a satisfactory disinfection. Some could not be used often enough on account of the irritation of the skin. The best result was attained by the Fürbringer method, which added one minute's washing with alcohol to the treatment with corrosive sublimate.

This led the author to look upon alcohol as the most important factor, and to test its value. A long series of experiments gave the following conclusions:

(1) Sure disinfection of germ-infected hands cannot be attained with the use of the antiseptics which act chemically which are at present employed, in a space of time which is short enough to be practised, or a concentration mild enough not to affect the skin.

(2) After thoroughly cleansing the hands in hot water with soap and brush for five minutes, a three to five minutes' scrubbing with spirits (about ninety per cent. alcohol) and subsequent washing off in an aseptic fluid will in all probability give absolute freedom from germs.

(3) A very safe, quick disinfection can be attained by scrubbing five minutes in alcohol.

DETERMINATION OF SEX.

Seligson[4] in a preliminary article on the subject of the cause and determination of sex, advances a few interesting facts in support of the theory that ova from the right ovary develop into males, those from the left into females. Rabbits from which the right ovary had been removed bore only female young, while those from whom the left had been extirpated brought forth only male. Again in all the cases of tubal pregnancy of which the author could find notes, where the sex of the fetus was given, nineteen in all, those of the right side were always males, those of the left females. These points would seem to merit further investigation.

FREUND'S OPERATION FOR PROLAPSE.

The suggestion of Freund to operate on simple uncomplicated cases of vaginal prolapse in old women by a series of buried silver-wire sutures surrounding and narrowing the vagina, met with instant recognition as a happy means of treating these obstinate cases. There is no doubt that the immediate results are satisfactory.

To determine the remote results Gaertig[5] gives the history of seven cases operated on by this method. All left the hospital in good condition. Of the seven, after an interval of a year, only two had certainly remained free from a return. Four were as bad as ever, in one case the sutures having cut through in fourteen days. In one the result was unknown. As a result of this experience, the author says that a definite cure should not be promised from this operation.

TREATMENT OF UTERINE CANCER WITH ALCOHOL INJECTIONS.

Vulliet[6] describes a method of treatment for cancer which is applicable only to inoperable cases, or cases of recurrence after total extirpation. It consists in injections of alcohol into the sound tissues around the diseased portion. Nine to twelve injections of three or four drops each are made at a sitting, the needle being inserted deeply. Finally the ulcer or cancerous nodule is surrounded by a ring of injections. These are repeated more or less frequently according to the tolerance of the patient. The result is a drying and hardening of the tissues, retardation of the growth, and diminution of the bleeding and foul discharge. The result is only palliative.

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[2] Zeit. für Geb. und Gyn., Bd. xxxi, Heft 2.

[3] Archiv. für Gyn., vol. xlix, 1895.

[4] Cent. für Gyn., No. 22, 1895.

[5] Loc. cit.

[6] Loc. cit., No. 23, 1895.

PREGNANCY AFTER SALPINGO-OVARITIS AND SUPPURATIVE PELVIC PERITONITIS (TWELVE CASES).[7]

This anonymous article makes a very strong plea in favor of the conservative treatment of these affections. As regards the question whether in cases of peri-uterine inflammation, which he admits are generally of infectious origin, the better operation is, according to Lawson Tait, the removal of the appendages, or, following Péan and Segond, total extirpation per vaginam, the author considers the latter course more logical. But he is of the opinion that in many cases a conservative treatment will result in complete functional restoration to health.

He bases his views on his own clinical experience, and gives the histories of twelve cases of these severe inflammatory affections in which more or less prolonged local treatment was followed by pregnancy. With the exception of one case where there was placenta previa with a very large fetus, and death followed immediately from post-partum hemorrhage consequent upon uterine inertia, the pregnancy in every case was normal, without accident of any kind, confinement easy, and the puerperium satisfactory.

The author says he is convinced that the influence of these peri-metric inflammations upon pregnancy is generally null. In fact he considers that it has a happy influence upon the pelvic conditions which follow the original trouble.

COMPLETE VAGINAL HYSTERECTOMY.

Richelot[8] describes a new method of operating for fibroids which merits notice on account of its simplicity. The operator stands between the patient's legs and makes the abdominal incision. The tumor is then delivered, and if large is enucleated either as a whole or by morcellement. The peritoneum is then stripped off the anterior uterine wall, so as to free the bladder. The index and middle finger of the left hand are then inserted into the vagina and pressed up against the anterior cul-de-sac. These are cut down upon from above with the scissors, the vault perforated in the middle, and the vaginal insertion divided as far as the sides of the broad ligaments. With the thumb in front of the ligament and the fingers behind, perforate the posterior cul-de-sac at a point which will enable the whole broad ligament to be grasped by a large pair of forceps. The same is done on the other side, and all that remains to be done is to separate the rest of the posterior cul-de-sac. An iodoform gauze dressing completes the operation. The author has operated this way three times, the time occupied being forty-five, thirty-five, and thirty minutes including the suture of the abdominal wound.

CLINICAL RECORDS.— *Athlete:* "Did — I — break it, doctor?" *Doctor:* "Your arm is crushed, your collar-bone broken, your skull — " *Athlete:* "But — have — I — broken — " *Doctor:* "What?" *Athlete:* "The — record?" — *Exchange.*

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[7] Arch. de Toc. et de Gyn., August, 1895.

[8] Loc. cit.

New Instruments.

NEW INSTRUMENTS.

BY EDGAR GARCEAU, M.D., BOSTON,
Surgeon to Out-Patients, Free Hospital for Women.

HYSTERECTOMY HOOK AND GUIDE.

IN performing the operation of vaginal hysterectomy according to the method of Péan, this instrument will be of service. It is simply a blunt-pointed hook (Fig. 1) on the end of a staff. The staff itself is grooved on the surface corresponding to the hook; the groove serves to guide the scissors in slitting the anterior wall of the uterus, while the hook serves to pull the organ downwards. The staff is made of pliable metal, which is at the same time firm; it can therefore be bent to conform to the canal of the uterus.

Those who have not seen the operation in which the uterus is made to descend by splitting up the anterior wall after preliminary hemostasis of the uterine arteries can form no idea of the simplicity of the thing. The fundus is everted with ease, even when there are considerable adhesions or when the ovaries are cystic and so cause obstruction to the descent. There is, however, at times some difficulty in finding the canal when the cervix has been amputated, and it is to obviate this difficulty that the instrument was devised.

Three advantages are claimed for it. In the first place, traction downwards can be made, the hook being imbedded in the uterine wall anteriorly; in the second place, it serves as a guide, telling the operator the exact position of the uterus, so that wounding the viscera may be avoided; and, finally, the groove serves as a director along which the straight scissors slide.

MODIFICATION OF KELLY'S CYSTOSCOPE FOR EXAMINATION OF THE FEMALE BLADDER.

Kelly's instrument is very familiar to the profession at present on account of the great aid it has given in diagnosing previously-obscure diseases of the female bladder. Now, the diseases attributed to the vague action of the *reflexes* is rapidly diminishing, and it is probable that this is truer of the bladder than of any other organ in the body. A simple hyperemia of the urethra is much more common than is generally supposed, and this alone is sufficient to upset a woman's nervous system completely. Inflammations of the neck of the bladder, as well as ulcers, tubercles and other lesions of the bladder itself, hitherto explained by the term *irritable bladder*, are now diagnosed with accuracy by actual inspection. The study of the ureters is also easy. With Kelly's instrument a sound can be passed directly up into the pelvis of the kidney, and the conditions here be ascertained. In short, a revolution has been accomplished by this little instrument.

The method of using it is simple. It is introduced into the urethra and into the bladder after preliminary deadening of sensibility by means of cocaine. Light is then reflected into it by the head mirror, and all parts of the bladder are inspected with ease. I found, however, that the urine which continues to be secreted while the instrument is in place gave a great deal of bother and that much time was lost in removing it with Kelly's suction bulb, so that the membranes of the bladder could be inspected. At times, too, if the woman stirred at all or happened to cough, and the urine had collected in any amount, the whole quantity would be suddenly expelled and go over everything, making the woman very uncomfortable and very much annoyed. The best way out of the difficulty seemed to be to remove the urine just as fast as it was secreted; by so doing much time would be saved and much annoyance avoided.

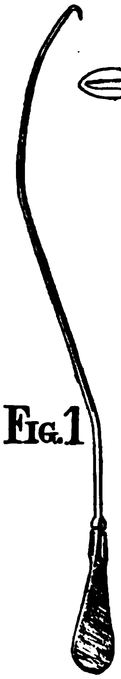
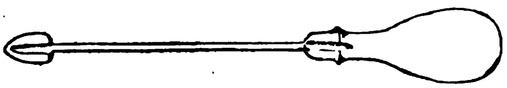


FIG.1



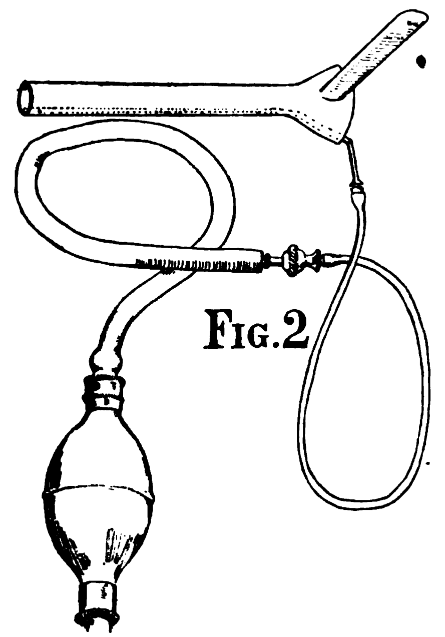


FIG.2

The modification which I have made in Kelly's instrument is simply a little tube of small bore which is soldered into the speculum (Fig. 2) in such a position that when the handle of the speculum points towards the woman's right thigh, when the speculum is in the bladder, the little tube lies at the lowest part of the speculum, so that every drop of urine is taken up by it. If now a Davidson's syringe is attached to the outer end of the little tube every single drop of urine can be sucked out as fast as it is secreted. The bulb of the syringe can be held by the same hand that holds the handle of the speculum so that an extra assistant is not needed. It is possible to make applications to the bladder wall or to the urethra in about one-third of the time that it would otherwise take, and when it is considered that time is an important element, the advantage is considerable. The little tube being soldered in the speculum is, of course, stationary; it does not, however, take up so much room that it interferes in any way. The obturator has a groove filed in it so that it can be inserted over the little tube. There is one detail which is worth mentioning, and that is that the little tube reaches quite to the end of the speculum and is occluded at its extremity, otherwise the bladder wall would choke it up and the syringe would not work; the holes through which the urine is sucked are three in number, one on each side close to the extremity, and one a little higher up.

The instrument can be obtained at Codman & Shurtleff's.

Reports of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION.

NINTH ANNUAL MEETING, CHICAGO, SEPTEMBER 17, 18 AND 19, 1895.

THE Society met in the Columbus Memorial Building, 103 State Street, and was called to order by the President, DR. JOHN RIDLON, of Chicago.

After the transaction of some routine business, the President delivered his Address. He selected for his subject

THE GROWTH AND PROSPERITY OF THE AMERICAN ORTHOPEDIC ASSOCIATION.

He said if one thing more than another had been instrumental in bringing about the present healthful organization, it was a wisely framed Constitution and By-Laws and a strict adherence to their requirements. To become a member, the candidate must be personally known by at least two members of the Association who voluntarily nominate him for membership, and he must have a creditable record of orthopedic work either as a writer, a teacher or a clinician.

The generous expenditure of practically the entire income of the Association in the annual publication of its volume of Transactions had played no unimportant a part in the development of the Society. In this regard President Ridlon urged upon the members the serious consideration of the publication of a monthly or, at least, bi-monthly journal, which shall contain all the papers read and discussions before the Association, and abstracts of all other worthy publications upon orthopedic subjects, whether first appearing here or abroad. Such a journal could be issued at little if any increase upon the cost of the present Transactions, and in the hands of an enterprising editor could within a year or two be made almost self-supporting.

Dr. Ridlon closed his Address by paying a tribute to the memory of Drs. Little and Detmold. Wm. John Little was born in London on August 17, 1810, and died July 7, 1894, being nearly eighty-four years old. Wm. Detmold was born in Hanover on December 27, 1808, and died in New York, December 27, 1894. In reviewing the record of the long and active lives and of the work accomplished by Drs. Little and Detmold, one feels that truly there were intellectual giants in those days.

DRS. R. W. LOVETT and JOHN DANE, of Boston, contributed a joint paper entitled

FLAT-FOOT.

They submitted the following conclusions: (1) That the feet of the infant at birth are not flat; that the tracing at that time resembles the adult normal foot. That a body of fat develops under the arch, which gives the appearance of flat-foot for some years, and that at the age of four or five years this is absorbed. (3) That the smoke tracing is not a perfect method of studying abnormalties of the arch of the foot, because it fails to detect the slighter cases or to record pronation. (4) That the element of pronation is more constant than breaking down of the arch of the foot, and may be entirely separated from it. (5) That the condition of pronated foot without breaking down of the arch of the foot should be recognized and not confused with flat-foot. (6) That the treatment of pronated- and flat-foot is the same, and consists in the use of proper boots, the application of a pad or plate, the stretching of the gastrocnemius muscle where it is shortened, and in the routine use of massage if obtainable, and always of exercises to develop the muscles which hold up the arch.

Dr. S. L. McCurdy, of Pittsburgh, read a paper on

CONGENITAL ABSENCE OF RADII, WITH OPERATION.

The patient was five months old, birth at full term, presentation normal. Complete absence of the radii, with abnormal relationship existing in the blood-vessels and soft structures of the forearm, otherwise child perfectly developed. Operative interference was not advised for the reason that no successful method had been invented. In the worst cases, where there is much bony deficiency, the choice lies between amputation and doing nothing. Professor Bardenheuer, two years ago, presented a new method for the operative treatment of these deformities. His operation in the forearm consisted in replacing the defect at its lower part with bone, and thereby permanently correcting the deformed position of the hand.

The operation is performed by a longitudinal incision; the distal end of the ulna and carpus are exposed, and the first isolated from its attachments. The ulna is then split through its middle into a radial and an ulnar section. These are separated by allowing the carpal bones to come up between them. By means of a nail through each side, the ends are fixed to the carpus. A plaster bandage is applied, and left on for four or five weeks. This operation is easily carried out. It has been done by Bardenheuer three times, and the results in all three cases were good, both from a functional and cosmetic point of view. In all cases the deformity was permanently corrected. The same principles may be adopted in the treatment of other defects. In cases of congenital defects of the tibia or fibula the same operation has been done once in each. The best result was obtained in the fibular defect.

March 1, 1895, operation was done, the desire being to adhere to the method described as near as possible. It was not possible, however, to follow the method. The soft structures, tendons, etc., were so much shortened that to attempt to shift the end of the ulna across to the centre of the carpus would have been impossible except by a virtual amputation of the arm. To have split the ulna and wire the carpal bones between these ends would have been impossible. The only method was to sever the ulna at a point where the free end of the upper fragment could be brought to the semilunar. The semilunar was curetted and drilled, and after drilling the ulna these bones were adjusted with silkworm gut. It was necessary to tenotomize the tendons upon the radial side of the forearm before the hand could be straightened. A number of arteries were severed and required ligation. The cut through the soft tissues was made obliquely across the forearm beginning upon the dorsum of the wrist upward and around under the forearm, the object being to allow the structures to slide upon each other, and then sutured in the corrected position, thus avoiding the gap that would otherwise be left after a cross-section. After dressings were applied, the hand was put up in plaster-of-Paris. Primary healing. The operation was done on the left arm, and a second operation was planned for the right arm, but the patient died with pulmonary tuberculosis five months afterward.

The author reported a case of congenital deformity with a decided history of natural impression. Mrs. S., whose husband was a railroad conductor, when about six weeks pregnant, was startled by the appearance of a crowd of men with a man on a stretcher, thinking it was her husband. She has a habit (when startled or in grief) of grasping the fingers on the left hand including the thumb, just below the knuckles, by the right hand. While the injured man was not her husband, the impression was imparted to her unborn child.

Dr. A. M. Phelps, of New York, reported a case of congenital dislocation of the shoulder-joint, and described an operation for its relief.

REMOVAL OF THE ASTRAGALUS FOR TALIPES VALGUS.

Dr. James E. Moore, of Minneapolis, read a paper on this subject, in which he said that the modern non-operative treatment of talipes valgus was so satisfactory that it is rarely necessary to consider operative measures. In acquired flat-foot, several operations have been tried in extreme cases, and among them Ogston's operation, which had probably been performed more frequently than any other, but at present it did not seem to have any very enthusiastic advocates. The scaphoid had been removed, but had not been followed by flattering results. The writer had studied this subject carefully about two years ago, when the following case fell into his hands.

The patient was a woman, twenty years of age, who had cut the internal lateral ligament of the ankle when she was a child by stepping on a piece of glass. An examination showed that the uninjured foot manifested a natural tendency towards flat-foot, and the injured foot showed extreme flat-foot, with the inner side of the great toe turned almost directly downward. She had grown gradually worse for some years, so that when she came to him she had been obliged to give up her employment as a domestic on account of the severe pain produced by standing or walking. On June 26, 1894, chloroform was administered with the hope of forcibly correcting the deformity, but owing to the extreme rigidity of the foot, failure was feared, so the patient's consent was gained to resort to a cutting operation if it was found necessary. It was found impossible to overcome the deformity by manual force, and an operation was decided upon. The displaced astragalus formed the bulk of the deformity, and was the keynote to the trouble. This, the author decided to remove, which he did through a longitudinal incision in the inner side of the foot. The foot could be immediately placed in a very satisfactory position. The usual surgical dressing was applied and foot held in proper position by a plaster-of-Paris bandage. The healing was prompt and satisfactory, and in about two months the patient began to walk. There is a marked improvement in the position of the foot. A photograph was shown, which was taken about one year after the patient began to walk, showing that the ankle which was atrophied had developed considerably. The result of the operation was more satisfactory from a practical than from an esthetic point of view. The patient still complains of some pain. When she stands much or walks more than usual, the foot is somewhat swollen in the evening, but she is now at work. While she is in every way better than before the operation, the result is not perfect; but the writer hopes that eventually she will be quite well.

Dr. Joel E. Goldthwait, of Boston, read a paper entitled

TENDON TRANSPLANTATION IN THE TREATMENT OF DEFORMITIES RESULTING FROM INFANTILE PARALYSIS.

The purpose of this paper was to call attention to the possibility of furnishing better mechanical attachments for certain non-paralyzed, or only partially paralyzed, muscles, as a part of the treatment of infantile paralysis. A certain number of cases were reported with results that were most gratifying, and from which it appears not unreasonable to class tendon transplantation with tenotomy and the other surgical procedures which have a place in the treatment of this condition. At the knee undoubtedly tendon transplantation can be employed to advantage in a certain limited number of cases, and possibly at some of the other articulations, although the best results are to be looked for in those portions of the body where the tendons are well formed and lie superficially. The operation is not to be attempted upon the tendons of muscles which are wholly paralyzed, except possibly in rare instances for the purpose of furnishing an additional support of a purely tendinous character. It is conceivable that in the foot, for instance, if the tendons on the inner side are more atrophied and offer less resistance than those on the outer side, these tendons might be attached to the inner side and thus increase the lateral support. This is merely a suggestion, however, it not having been tried practically, and the benefit to be derived therefrom would undoubtedly be slight. There is also a question as to whether or not two atrophied tendons would unite firmly, although from watching the other cases, the author doubts if there would be any trouble on this account.

The best results from tendon transplantation are to be obtained in those cases in which one group of muscles has been destroyed, leaving the antagonizing or accessory muscles very little if any impaired. This results in a definite deformity which becomes more marked as the age increases. The best illustration of this is to be found in the condition so commonly seen in the foot where the gastrocnemius and the muscles at the inner side of the foot have been destroyed, the peroneal muscles retaining their normal contractility. The result is a valgus which constantly increases, both from the muscular contraction and from the faulty mechanical position in which the weight of the body must be received upon the foot in walking or in standing. This is also seen in connection with the anterior muscles of the foot, the anterior tibial and the extensor pollicis so often being destroyed leaves the peroneus tertius and the extensor communis digitorium, the only muscles to be used in flexing the foot at the ankle. This also results in a valgus which steadily increases.

To correct these mechanical conditions and to use the non-paralyzed muscles to the best advantage, the author had operated upon four cases and the tendons of the muscles given new attachments.

Case I. A young woman, nineteen years of age, who came to the Carney Hospital October last, complaining of trouble in the left foot. When nine months old she became paralyzed, which partially cleared up, leaving the foot very weak, so that walking has always been difficult. This has been growing worse of late, and there has been considerable pain referred to the inner side of the foot under the inner malleolus. The left leg was one inch shorter than the right. There was marked atrophy of the left calf, and the foot was in the position of extreme calcaneo-valgus. In walking the weight was borne upon the inner edge of the heel, the anterior portion of the foot being turned outwards fully forty degrees with the normal axis of the ankle-joint. The posterior muscles were all paralyzed, with the exception of the peroneus longus and brevis, and the tendons of these muscles instead of lying in the groove behind the external malleolus had been drawn forward so that they rested on the outer surface of the malleolus near its anterior edge. With the tendons in this position the action of the muscles caused extreme valgus and slight flexion at the ankle instead of extension as should be the case. The anterior muscles were practically normal, and having no posterior muscles to antagonize them, their contraction caused such extreme flexion that the dorsum of the foot rested against the anterior surface of the leg. A short time after this, the patient entered the hospital, and the following operation was performed.

An oblique incision four inches long was made so that it crossed the tendo-Achilles about one inch above its insertion into the os calcis. Through this wound the peroneal tendons were exposed and divided at about the lower edge of the malleolus. The tendo-Achilles was then freed, and the tendon of the peroneus brevis passed under this and attached to the tendon of the flexor longus pollicis. The tendon of the peroneus longus was then attached to the tendo-Achilles, after which the wound was closed, and a plaster-of-Paris bandage applied, holding the foot extended in order to relieve the strain as much as possible from the sutured tendons. One month later a valgus plate was applied, and this has been worn since.

The method of attaching the tendons to each other is of great importance, and unless they are firmly joined the benefit of the operation is lost. The tendon to which the attachment is to be made is split, and the end of the severed tendon, after it has been scored, is drawn through this slit, and securely held by two quilted sutures, which are so placed that when tightened the outer tendon is spread out, furnishing a broad surface for union. The result was best shown by the photograph which was exhibited. The valgus has largely been corrected, and what remains is controlled by the plate, so that the tread of the foot in walking is quite normal. As a fair test of the result, during the last five months the patient has been doing general housework, and has suffered no inconvenience from the foot.

Dr. Royal Whitman, of New York, read a paper entitled

A STUDY OF THE WEAK FOOT WITH REFERENCE TO ITS CAUSES, ITS DIAGNOSIS AND ITS CURE; WITH AN ANALYSIS OF ONE THOUSAND CASES OF SO-CALLED FLAT-FOOT.

The reader emphasized the importance of looking on the foot as a mechanism, and on the flat-foot not as a deformity only, but rather as a weak or disabled machine. Attention was called to the function of the normal foot. That it was not only a support, but also a lever. If this activity or leverage was diseased or lost, the foot was subjected to great mechanical disadvantage. He laid particular stress upon the component elements which made up the weak or flat-foot. These were (1) the improper distribution of the weight upon the foot because of the pronation or valgus, (2) the displacement of the line of strain by the abduction of the foot, and (3) the secondary lowering of the arch.

The various predisposing and exciting causes of weakness were enumerated. The importance of the early recognition of the weakness, and of the training of children in order that future disability might be avoided; the importance of the proper shoe, both in childhood and adult life, and the treatment for the various grades of weakness and deformity, were then discussed, and illustrated by diagrams and casts.

In conclusion the writer emphasized the following points. Flat-foot, in its surgical sense, is a compound deformity, of which the elements of valgus and abduction, the improper distribution of the weight and strain, are of vastly greater importance than the depth of the arch. The weak and flat-foot can be cured, but only by the application of the simple principles that any mechanic would apply to a disabled machine whose structure and use were known to him; in other words, there can be no permanent cure of weakness and deformity unless normal function is regained, nor effective treatment unless it has this end in view. The term weak foot has at least this advantage, that it implies nothing that the student must unlearn; it is because of the misapplication and misapprehension of flat-foot, and because of the associations which have so long obscured the rational treatment of the deformity, that the term has been discarded from the title of this paper.

Dr. L. A. Weigel, of Rochester, N. Y., contributed a paper on

METATARSALGIA.

Dr. Roswell Park, of Buffalo, N. Y., read a paper on

THE DEFORMITIES AND MALFORMATIONS RESULTING FROM ACUTE INFECTIONS IN BONE.

Clinically, there are three locations in which bone infections are most commonly met with — beneath the periosteum, in the epiphyses, and in the diaphyses. From the pathological side, infections are of four main varieties: (1) the tubercular; (2) the staphylococcus; (3) the streptococcus; (4) the pneumococcus. To these may be added rare instances in which other organisms are primarily or secondarily present. Of these, certainly the more common is the tubercular form, whose manifestations are usually not acute. The other three may be grouped in a general way as pyogenic forms of invasion in which pus is practically invariably produced, providing only that sufficient time has elapsed. The author alluded to the acute miliary tuberculosis of bone, which corresponds in most essentials with similar invasions of the lungs, and of which he had seen occasional examples. It is not quite so rapid as the pyogenic forms, and it may take two or three weeks to produce such destruction of the bone as to necessitate operation. It stands, therefore, in intermediate position between the acute infections and the slower (usually the tubercular) lesions. Nevertheless, it is sufficiently acute to demand prompt recognition, and when recognized may often be relieved by prompt operative interference. The course of a bone disease will depend first upon the location of the lesion, and secondly upon its character.

As showing the relative frequency of parts involved, of 30 cases observed by Kocher the disease occurred 13 times in the tibia and 11 in the femur. Of 98 cases collected by Leucke and Volkmann, the femur was involved 36 times, the tibia 34, and the humerus 11. Disease in the immediate neighborhood of the hip-joint is about five times as common as in that of the knee. Comparing epiphyses with diaphyses, and accepting Schede's 67 cases, we find that of 28 cases in which the femur was involved, half of them were in the shaft and half in the diaphysis. In the tibia, of 27 cases only 9 concerned the epiphysis; and of 7 cases of the humerus, 2 involved the epiphysis.

With regard to necrosis, it concerned orthopedists mainly in this, that it produces in many instances a weakening of the bone which may lead either to fracture, deformity or curvature. Spontaneous fractures of necrotic bone had occurred under the writer's observation, and he remembers one case of necrotic femur which broke as he was lifting the patient upon the operating table. Incidentally, there is danger of cancer in some of these cases, for Volkmann collected 32 cases in which old and fistulous passages became the site of epitheliomatous changes, and in which cancer was the final result.

Dr. James Kerr, of Washington, D. C., followed with a paper entitled

JOINT DISABILITY FOLLOWING FRACTURES.

Dr. R. W. Lovett, of Boston, read a paper entitled

AMBULATORY TREATMENT OF POTT'S DISEASE.

He considered this disease a very grave one, which ought to be treated largely by recumbency during the active stage, for the reason that we recognize that our apparatus is intrinsically imperfect on account of the nature of the problem. If we use apparatus, it seems to him that the proper use would be in a small way to vary the monotony of recumbency. Used in any way, we should remember that the position of the superincumbent weight is a most important matter, and that the chest and head should be thrown as far back as possible. Indeed, we see nature trying to throw the chin into this position continually. We should also remember that the higher up the body or backward pull is made, the less is required, and that when this limitation in the use of apparatus is accepted, its field will be more limited than it is now. The use of traction during recumbency seems to the author an advantage, inasmuch as it adds but little to the discomfort of the child, and it manifestly increases the length, which it can only do by diminishing the curvature in the vertebral column.

Dr. A. E. Hoadley, of Chicago, exhibited and described

A NEW SPINE BRACE.

It was designed and adopted by him for the mechanical support of the middle region of the spine. The range of its greatest utility is the support which it affords to the spinal column between the middle of the lumbar and the middle of the dorsal regions, although its usefulness is not strictly confined to these limits. Inasmuch as the greater number of diseases of the spinal column requiring mechanical fixation occur within this region, its usefulness will be comparatively very great, if found to be efficient. In its simplest form the brace consists of a steel frame, a rigid chest-pad and two aprons. The chest-pad is adjusted in contour to fit the upper anterior portion of the chest. The pad in length is about three times its width and adjusted transversely, resting immediately below the sterno-clavicular articulations. Its real length transversely should be as long as practical without being interfered with by the action of the pectoralis major muscles in the movement of the shoulder. It should be made of sheet metal hammered to give shape and rigidity, covered and lightly padded. The author then described in detail the component parts of this brace, which he divided into four portions: an upper, a lower and two lateral portions. This brace will be found useful to orthopedic surgeons.

REPORT OF FOUR CASES OF SPONDYLITIS OF THE SECOND CERVICAL VERTEBRA.

A paper was read on this subject by **DR. REGINALD H. SAYRE**, of New York.

Three years ago he brought before the Association some cases of spondylitis of the second cervical vertebra, as it happened that within a few months' time four cases came under his observation which presented almost identical lesions, accompanied by very similar deformities. These cases had now been without apparatus to support the head for a number of months. In all of them there was noted a small swelling at the back of the neck, at the level of the first or second cervical vertebra, which in each instance happened to be on the right side of the neck. In each case the chin was directed toward the right side of the body, the right sterno-cleido-mastoid muscle was rigid, the face looked downward, while the left ear was brought much nearer the corresponding shoulder than its fellow. In one instance, the face was deflected so far from the perpendicular as to be almost parallel with the floor and pressed so closely against the clavicle as to cause an excoriation. The position of the head was in marked contrast to that assumed by patients with torticollis due to contraction of the right sterno-cleido-mastoid muscle. Motions of the head in any direction were excessively painful, and the patients supported their heads with their hands almost incessantly. In turning to view any object the entire body moved as a solid mass without any rotation of the head. The jaw was opened with great difficulty in all cases. At the present time, all but one case can open their mouths freely, and this case has much more control of the mouth than formerly and is enabled to swallow with much more ease. In all the cases the chin was so much depressed as to make swallowing difficult.

These cases were treated by means of a support, which consisted of a pelvic belt with two upright back bars passing upward over the shoulders and held in position by shoulder-straps and an apron. From this an extension rod passed from between the shoulders to the base of the skull, where it joined a rolled metal band passing around the head and secured in position by a forehead strap and a strap passing under the jaw from ear to ear. Universal joints at the back of the neck and between the shoulder blades allowed the adjustment of this apparatus to any position of the head, while the distance between the head and body pieces was regulated by a rachet and key extension. Three cases at the present time seem practically well, and since the removal of the support, the range of motion of the neck has increased in all directions and there has been no return of pain.

DR. A. M. PHELPS, of New York, followed with some remarks on

A STUDY OF THE ANTERIOR FORMS AND BURROWINGS OF LUMBAR ABSCESSES.

DR. S. L. MCCURDY, of Pittsburgh, described and exhibited

A COMBINATION TRACTION AND IMMOBILIZATION HIP-JOINT BRACE.

Traction was of the utmost importance. In order to apply traction, as well as immobilization, to the hip-joint in disease, the author had devised a combination of the long traction hip-splint and the Thomas splint.

DR. JOHN D. SKEER, of Chicago (by invitation) exhibited

A NEW SURGICAL SAW.

He said that where there is non-union of the bones after excision of the knee-joint, we have conditions that may give rise to any degree of deformity. Any procedure that will prevent the rotation and backward displacement of the tibia, without the interposition of any foreign body between the cut surfaces of the bones, will contribute to the success of the operation. If the tibia were cut off slightly concave and the femur correspondingly convex, the bones would lock together in such a way as to prevent rotation and the backward displacement of the tibia. This method of joining the bones together was first practised by Dr. Fenwick, of Montreal, in 1868, and published in the "International Encyclopedia of Surgery." The doctor used a fret-work saw adapted to a butcher's frame and states that the "bones should be accurately adjusted and if they do not fit nicely saw off a thin slice from either or both of the bones, and if necessary remove thin slices with the cartilage knife."

Objection has been urged against Fenwick's operation, for the reason that pockets have been found between the ends of the bones in which matter accumulated and prevented union. Dr. Skeer apprehends that the pockets and irregular open spaces were made with the narrow saw and the cartilage knife at the time of the operation.

He proposes to improve the technique of this operation by making the sections with a concavo-convex saw which he had devised for that purpose and which cuts a true circle, so that when the cut surfaces of the bones are brought together they will coaptate with mathematical accuracy. The saw-blade is nine inches long and two inches broad, curved on the flat with a concavity of one-fourth of an inch.

DR. W. O. PLIMPTON, of New York, read a paper entitled

EXCISION OF THE KNEE AS AN ORTHOPEDIC PROCEDURE.

The success of the operation is no longer an experiment, and when performed under right conditions and by a skilful operator should not only save limbs but lives. Too much cannot be said in favor of early treatment by mechanical and fixation methods in disease of the knee-joint. If the profession at large recognized disease of this joint in its incipiency and employed extension and fixation methods of treatment, comparatively few cases would advance so far as to necessitate excision. It is the duty of the orthopedic surgeon who teaches to lay special stress upon the early recognition, as well as early mechanical treatment, of these diseases. When the fixation and extension plan of treatment has been conscientiously tried and has not arrested the disease which is manifestly on the increase, the surgeon should explore the joint and do whatever the conditions demand, whether to wash out or to excise. When the articular surfaces are destroyed, the bone and the soft parts extensively involved, the joints should be excised.

In the series of excisions which the author reported, there were several examples of great destruction from osteomyelitis and tubercular disease where amputation was avoided and several inches saved to the length of the limb by allowing the cavity to fill and the clot to organize. In one case of osteomyelitis seven inches of bone were reproduced. In determining what operation for excision of the knee best subserves the requirements, it may be said that that method which allows of the most complete removal of all diseased tissue and affords perfect drainage, retains the parts in best apposition and fixes the bones without the use of pins or wire, and last, but not least, the one that can be done with the greatest ease and rapidity, is to be preferred. Fenwick's operation fulfils all requirements, with a few exceptions. Where the head of the femur is destroyed, precluding the section according to Fenwick, Phelps has devised a method to meet this condition by sawing a wedge-shape at the end of the femur and a V in the tibia for its reception. The length of time taken for excision of the knee is an important element with regard to the mortality of the operation, as the shock of the operation in excision of the knee must of necessity be profound. The author said that Dr. Phelps, on an average, did not consume more than fourteen and one-half minutes in excisions of the knee, except in exceptionally bad cases. He had seen him do an excision in ten minutes from the time the first incision was made until the last plaster bandage was in place.

Dr. A. J. Steele, of St. Louis, exhibited

AN APPARATUS FOR THE TREATMENT OF CLUB-FOOT, AND TWO CONTRIVANCES TO BE USED IN HEAD-TRACTION AND IN HIP-TRACTION.

Dr. Louis A. Weigel, of Rochester, N. Y., read a paper entitled

MECHANICAL SUPPORT IN THE TREATMENT OF SCOLIOSIS.

He believed that a mechanical appliance could be used with as much benefit, be made to do its work and be worn as comfortably on the back as on the legs.

The following officers were elected: President, Dr. Royal Whitman, of New York; First Vice-President, Dr. George W. Ryan, of Cincinnati; Second Vice-President, Dr. Joel E. Goldthwait, of Boston; Secretary, Dr. John Ridlon, of Chicago; Treasurer, Dr. E. G. Brackett, of Boston.

Place of meeting, Buffalo; time, third week in May, 1896.

THE BOSTON
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A MEDICAL VIEW OF THE MIRACLES AT LOURDES.

Dr. Edward Bedoe has been to Lourdes, and he writes his impressions of the "miracles" there being performed.[1] He says that a visit to Lourdes will furnish the physician with more food for reflection than a dozen clinical lectures, or a series of visits to all the great hospitals of Paris, London and Vienna. He will, among other useful things, learn how little he knows, after all, about these patients whose pulses he feels, whose temperature he takes, and whose tongue he inspects in his daily work. He will discover that a man, and still more a woman, is a great deal more than the physiologist has told him, and that the physiologist has but lifted the veil which shrouds the mystery of the human organization.

He went to Lourdes in the month of August, on the eve of the festival of the Assumption, and "mingled with the thousands of pilgrims who sought the virtues of the sacred fountain at the rock of Massabiele." He found it difficult "to remain strictly philosophical," "impossible to be coarsely sceptical" in that strange assembly. Hard indeed would be the heart of any medical man which could remain unmoved by the sights which met his eyes. At no other spot in the wide world could the medical faculty behold at a glance so many of its failures! A cemetery could hardly rebuke our art more sternly! The pilgrims were mostly of the upper middle — not of the poorer — classes. It was an army of incurables. At terrible cost of suffering and inconvenience they had reached this place: consumptives in the last stage of the malady; paralytics, the subjects of spinal disease; the wretched victims of rheumatic arthritis; cases of lupus with faces and eyes devoured by the malady; children, mere bundles of skin and bone; idiots and epileptics, halt, lame, and blind, whose last hope was the Virgin of Lourdes!

No one who has not visited Lourdes "can have any idea of what the sincerest prayer and the highest devotion are," possibly because bodily suffering touches us more closely than anything else. The suppliants in the grotto kneel for hours with arms outstretched, wrapt in devotion, and often in ecstasy, regardless, or rather unconscious of the bystanders who have visited the place from curiosity. But an air of deepest reverence envelops the whole multitude. This earnestness on the part of the worshippers, Dr. Bedoe says, exalts the whole organism and serves of itself to explain much of the thaumaturgy. Is it after all so very different from the wonders wrought in the temples of old? Miracles have always been affirmed in connection with such circumstances and such religious exaltation. The temples of Esculapius in Ancient Greece were visited by the sick just as Lourdes and St. Winifred's Well are visited now, and with as much benefit apparently. After prayer to the god, ablutions and sacrifices, the patient was put to sleep on the skin of an animal offered at the altar while the priests performed their sacred rites. The appropriate remedy would sometimes be suggested, but more commonly rules of conduct and diet would suffice. When the cure took place, which very frequently happened by suggestion, as in modern hypnotism, and by the stimulus to the nervous system consequent upon the pilgrimage and the hope excited in the patient, a record of the case and cure was carved on the temple walls exactly as is done to-day at Lourdes.

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[1] Nineteenth Century, October, 1895.

Dr. Bedoe believes that faith was the *sine qua non* in Greece as in the Pyrenees, everything connected with the temple and its ceremonies was calculated to excite religious awe and to stimulate faith. The patient underwent purifications, fasting, massage and fomentations; this treatment is paralleled at Lourdes to-day. The Greek invalid was well primed with the stories of the marvellous cures which had taken place at the sacred fane; he began to feel the blessed stimulus of hope. He offered prayers and sacrifices that in the incubatory sleep the remedies for his ailment might be revealed. If all failed, it was set down to the want of faith on the patient's part, not to any defect on the part of the divinity or the priests.

Miracles of healing took place, if history may be credited, in Egypt, Babylonia and Chaldæa; anthropologists tell us that they happen with savages. As Christianity has no monopoly of faith-healing we may imagine what it is which underlies all these phenomena. To set them aside as silly talk and priestly frauds is to betray the non-scientific mind; so universal a thaumaturgy implies a basis of fact which we must not despise. Professor Charcot says that faith-cure "is an ideal method, since it often attains its end when all other means have failed." It is entirely of scientific order, though its domain is limited; to produce its effects, it must be applied to those cases which demand for their cure no intervention beyond the power which the mind has over the body. Purely dynamic diseases are cured by this means, but not organic maladies. Ulcers and tumors may be caused to disappear if such lesions be of the same nature as paralysis and other disorders of motion and sensation which are commonly considered to be the sole field for the influence of the faith-cure.

M. Littré is cited as describing seven "miracles" which took place in France at the end of the thirteenth century at the tomb of St. Louis. He states the simple facts, as given in the churches of the period, and endeavors to give a pathological interpretation of them. He notices, in the first place, that at the moment of cure the patient felt a sharp pain; the part affected seemed to be stretched or touched, and sometimes a sort of cracking sensation in the bone was experienced; then movements became possible, although the lengthening of the limb and the possibility of moving it were not felt immediately. The cure was not so sudden; a period of weakness, long or short always followed the miracle, and the part only gradually regained its use. The cracking of the bone is just what the surgeon finds when he moves a joint which has become fixed by disease; without breaking down these adhesions, he can do nothing to restore the articulation. In cases of rheumatic paralysis a similar state of things is observed. We recognize the cracking and the pain as genuine pathological details; we should not expect a natural cure without these details. Littré explains the process in the words of Dr. Onimus, who applied to the elucidation of the subject his theory of nervous vibrations. The ascending action or vibration expresses the influence of the physical on the moral; the descending action or vibration expresses the influence of the moral on the physical. In these cases it is the descending action which we have to consider. This action is exerted on the muscular portion of the affected part; it contracts energetically; it breaks down the pathological adhesions if they exist; it restores the bones violently to their place. This done, the patient is in condition to use the limb, but not without passing through a period of debility which requires time for recovery. It is a violent extension produced by muscular contractions. What the surgeon has to do with his hand is here done by an influence exerted on the muscles themselves, and in a far more beneficent manner than surgery can effect.

What is the exciting cause of these energetic contractions? That, Dr. Bedoe says, which we find in all miracles of this sort — a strong persuasion, a complete confidence. Under a profound emotion born of these sentiments, the patient, feeling that the cure was in the extension of the part, had a belief which he could understand. Of course, such faith is not possible in every case. On one side there must be the mental condition which can receive in its fulness the emotion born of persuasion and confidence; and, on the other, all lesions must be susceptible of cure.

Dr. Bedoe gives familiar instances of unwonted strength generated by strong excitement. A gouty man who has long hobbled about on his crutch finds his legs and power to run with them if pursued by a wild bull. The feeblest invalid under the influence of delirium or other strong excitement will astonish her nurse by the sudden accession of strength she may exhibit. In other words, these phenomena, like the majority of the miracles of healing, are effected by the overpowering influence of a great idea on the nervous system.

REORGANIZATION OF MEDICAL BOARDS IN THE NEW YORK CITY HOSPITALS.

The Commissioners of Public Charities and Correction in the city of New York have given the medical profession of that city one of the greatest sensations it has had for a long time by their action, made public on October 21st, in arbitrarily abolishing all the present medical boards (including both consulting and visiting physicians) of the various hospitals under their direction, with the exception of that of Bellevue Hospital. The institutions affected are the great City (formerly Charity) Hospital, on Blackwell's Island. the Hospital for Nervous Diseases, the Maternity, Workhouse and Almshouse Hospitals, and the Fordham, Gouverneur and Randall's Island Hospitals. It is proposed to substitute for the present boards new boards, the appointments to which are to be decided upon by the Faculties of the College of Physicians and Surgeons, Bellevue Hospital Medical College, and the Medical Department of the University of the City of New York. The medical board of the Harlem Hospital, as previously reported in these columns, has already been reorganized on this basis. It is felt by many of the profession not connected with the three schools previously mentioned, that this action is unjust to the physicians and surgeons holding hospital appointments, and that it practically excludes medical men who are not graduates of these colleges from any chance of obtaining such positions.

At the first meeting of the New York County Medical Association after the summer recess, which was held on October 21st, a Committee appointed at the June meeting to consider hospital and dispensary abuses and other matters made a report in which the action of the Commissioners was strongly condemned. In the case of the Harlem Hospital this Committee asked for a hearing before the Commissioners in the interest of the medical men who had been summarily deposed, and urged upon the appointing boards of the medical colleges that action should be deferred until charges had been preferred, or, in the absence of charges, that they should be re-appointed. Both the colleges and the Commissioners, however, totally ignored the communications of the Committee.

The following resolutions of protest were accordingly adopted by the Association:

Resolved, That this Association condemns the wholesale dismissal of medical men from hospital positions without cause or hearing.

Resolved, That we express our disapproval of the action of the Faculties of the four divisions of Bellevue Hospital and the Commissioners of Public Charities and Correction in ignoring the communications of the Committee of the Association.

On the other hand, the Commissioners contend that the new system now announced will result in giving better medical services to the hospitals affected thereby.

MEDICAL NOTES.

Homeopathy in Peru. — It is announced in the daily press that an American physician, after five years of struggle, has secured the right to practise homeopathy in Peru.

"Index Medicus." — The following subscriptions for the *Index Medicus* have been received by Dr. J. S. Billings, for the period September 24, to October 24, 1895:

Battle Creek, Mich.: American Medical Missionary College.
Boston, Mass.: Dr. J. R. Chadwick, E. G. Cutler, Dr. Dr. F. C. Shattuck, Dr. E. Wigglesworth, Boston Medical Library Association (2 copies), Boston Society for Medical Improvement (4 copies), State Board of Health, Massachusetts.
Bristol, Eng.: Bristol Medical Library.
Brooklyn, N. Y.: Dr. George R. Fowler, Pratt Institute.
Buffalo, N. Y.: Dr. M. D. Mann, Dr. John Parmenter, Dr. Roswell Park, Medical Department, University of Buffalo.
Chicago, Ill.: Dr. J. H. Etheridge, Dr. E. Fletcher Ingals.
Cincinnati, O.: Dr. Joseph Ransohoff.
Cleveland, O.: Dr. Hunter Robb.
Denver, Col.: Dr. J. T. Eskridge.
Grand Rapids, Mich.: Medical Library Association.
Nashville, Tenn.: Dr. Richard Douglas.
New Haven, Conn.: State Board of Health, Connecticut.
New York City: Dr. I. Adler, Dr. Samuel Alexander, Dr. L. B. Bangs, Dr. Francis Delafield, Dr. A. A. Herter, Dr. A. Jacobi (2 copies), Dr. Mary Putnam Jacobi, Dr. E. E. Keyes, Dr. F. P. Kinnicutt, Dr. Charles McBurney, Dr. John P. Munn, Dr. W. K. Otis, Dr. Wm. M. Polk, Dr. B. Sachs, Dr. H. Reginald Sayre, Dr. John E. Weeks, German Hospital and Dispensary, New York State Medical Association, Woman's Medical College of New York Infirmary.
Philadelphia, Pa.: Dr. Thomas G. Ashton, Dr. F. X. Dercum, Dr. H. A. Hare, Dr. Ernest Laplace, Messrs. Lea Brothers & Co., Dr. J. H. Musser, Dr. S. D. Risley, Mr. W. B. Saunders, Alumni Association of Woman's Medical College, College of Physicians of Philadelphia, Philadelphia County Medical Society, Philadelphia Pathological Society.
Pittsburgh, Pa.: Alleghany County Medical Society.
Providence, R. I.: Dr. M. B. Gornberg.
Richmond, Va.: Dr. G. B. Johnston.
St. Louis, Mo.: Dr. E. C. Burnett, Dr. Henry H. Mudd.
San Diego, Cal.: Dr. Wm. A. Edwards.
Troy, N. Y.: Dr. Wm. Wotkyns Seymour.
Washington, D. C.: Medical Society of District of Columbia.

NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, October 30, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 107, scarlet fever 38, measles 3, typhoid fever 39.

The Staff of the City of Boston Almshouse and Hospital.— The following gentlemen have been appointed as a visiting staff to the almshouse and hospital on Long Island, Boston Harbor: Dr. Abner Post, visiting surgeon; Dr. James J. Minot, visiting physician; Dr. Eugene A. Crockett, visiting surgeon; Dr. Alex. Quackenboss, visiting ophthalmic surgeon;

Dr. Edward W. Taylor, visiting neurologist; Dr. William T. Councilman, visiting pathologist. Each of these well-known physicians holds some position in connection with one or more of the following institutions: Boston City Hospital, the Massachusetts General Hospital, the Carney Hospital and the Massachusetts Charitable Eye and Ear Infirmary, so that to the patients is guaranteed the best of treatment and to the commissioner and superintendent a body of trained expert medical advisers in the management of the institution with which they are connected.

NEW YORK.

Adenoids and Naso-Pharyngeal Catarrh. — At the last meeting of the County Medical Association the principal paper of the evening was by Prof. J. Solis-Cohen, of Philadelphia, who took for his subject, "Lymphoid Hypertrophies at the Vault of the Pharynx (so-called Adenoids) and their Relations to Rhino-Pharyngeal Catarrh."

Death of Dr. Conrad. — Dr. Harry B. Conrad died suddenly of cardiac disease while walking in the street with his wife on Sunday evening, October 20th. He was a prominent up-town physician, and forty-three years of age. He was a graduate of the Medical Department of the University of the City of New York in the year 1877, and belonged to the Academy of Medicine and other Societies.

Miscellany.

ONE THOUSAND MAJOR GYNECOLOGICAL OPERATIONS.

During the last ten years Schauta, gynecological surgeon at Vienna, has performed a thousand capital gynecological operations, the results of which have been published by his assistant Herzfeld.[1]

Ether is preferred to chloroform, as being the safer anesthetic; Schauta, however, thinks "that the affections of the air-passages are a contraindication to the employment of ether (?). Formerly he used chloroform; but several cases of death happened under this anesthetic, which led him to renounce its further use. He thinks that the malaise following ether is of shorter duration and the vomitings are less frequent than under chloroform anesthesia (a still disputed point).

Nearly all of Schauta's operations were performed for affections of the uterus or its adnexa. It has been the general custom of this surgeon, during the course of the operation, to make a bacteriological examination of the contents of the tumors or organs removed. This examination suffices to demonstrate the existence or the absence of the streptococcus, the staphylococcus, or the gonococcus, etc. If the presence of bacteria has been determined without identification of the species, drainage is deemed necessary, as in all cases where the examination has revealed the existence of pathogenic bacteria. The drainage is effected by means of strips of iodoform gauze introduced into a "pocket" of the same material and placed in Douglas's pouch and left till the fourth day and sometimes longer.

In 49 cases celiotomy was performed for extra-uterine pregnancy. Half of these patients had retro-uterine hematocele. Four died, but in two only was the death the direct result of the operation. The operative procedure was essentially the same as that in usage for extirpation of the adnexa. In half the cases the adnexa of the opposite side were also removed, being the seat of inflammatory alterations; almost all these patients were in the early months of pregnancy; in six only was the pregnancy far advanced. The results of these 49 operations are considered as encouraging to early extirpation of the fetal pouch, that is, of the adnexa, as the fetus generally develops in the tube or in a tubo-ovarian sac, the result of inflammatory processes. The ovary itself, is but exceptionally the seat of an extra-uterine pregnancy. As for the so-called "abdominal pregnancies," they are always, so to speak, secondary to a tubal pregnancy.

In 160 cases operative intervention was demanded for uterine myomata or fibromata. In 40 of these patients the operation was castration (followed by two deaths from secondary hemorrhage). In 18 cases the tumor was enucleated (four deaths). In 21 cases there was total extirpation of the uterus by the abdomen, vagina, or sacrum (three deaths). The operation by sacral resection is reserved for certain tumors situated low down, and to which access is more easily obtained through the posterior part of the pelvis. In 81 cases supra-vaginal amputation was performed (15 deaths).

In 160 cases the uterus was extirpated for carcinoma, with a mortality of 13 per cent. In 140 of these cases, the uterus was removed *per vaginam* (12 deaths). Fifteen times the ablation was performed by removal of part of the sacrum — there was a mortality of five. In four of these patients the carcinoma had extended beyond the limits of the uterus; Schauta has since then declined to operate on any more cases of the kind. While cancers of the cervix are better removed *per vaginam*, the sacral method is preferred for tumors of the body of the organ. In a few instances the uterus was removed by abdominal section; four out of five of these persons died.

Ovariotomy was practised on 198 patients. In 47 cases torsion of the pedicle was found, the mortality was 8.1; Cæsarean section was performed 43 times; six of these cases were followed by supra-vaginal amputation, and 37 by suture of the uterus. Two of the six patients operated on according to Porro's method succumbed. Thirty-eight patients were the subjects of a conservative Cæsarean section; four for eclampsia, and two deaths, and 31 for narrow pelvis; of the other two cases, one had contracted vagina and the other a lithopedion, causing serious obstruction to delivery. Of the 31 operations for narrow pelvis, two only were fatal. The superiority of the conservative section over other operations seems demonstrated; Schauta deems it even preferable to symphyseotomy. The incision is made without the elastic ligature; the loss of blood is not excessive. Silk sutures, deep and superficial, unite the edges of the uterine wound, and the duration of the operation is only about twenty minutes.

Castration was performed in five cases of osteomalacia; all got well of the disease (*modus operandi* not understood). Castration was also practised in five cases of grave menstrual psychoses; four were cured or greatly benefited.

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[1] Klinischer Bericht über 1,000 Bauchhœhlen-Operationen als Beiträg zur Lehre von der Indikation und Technik der Koeliotomie, Vienna, 1895. See also analysis of J. K. Comte in Semaine Médicale, 1895, p. lxii.

Total extirpation of the uterus by the vagina was effected in 181 patients; there were 14 deaths. As for total extirpation by abdominal section, this was attempted but four times (one death by pneumonia).

Abdominal hysteropexy was done 77 times. All the patients got well. The fixation was effected either by means of a median suture traversing the anterior wall of the uterus, or by two lateral sutures including the round ligament and a portion of the uterine wall. In all these patients, who had been under observation at variable periods, a permanent cure seems to have been obtained; two of them have gone through a normal pregnancy. This operation, Comte thinks, ought to be reserved for cases where the uterus is fixed in retroversion combined with retroflexion, for the success of vaginal hysteropexy among gynecologists of the present day seems destined more and more to limit the indications of ventro fixation.

Among the laparotomies made for the purpose of diagnosis, there were 15 cases in which the operation disclosed chronic tuberculosis of the peritoneum; 14 of these patients got well after the operation.

An interesting case is recorded of strangulation of the uterus in retroflexion by torsion around its own axis in a woman aged twenty-four years; the torsion was produced during an effort to raise a heavy burden. The right cornu of the uterus, very much swollen, was strangulated in Douglas's pouch, while the left was turned upward and forwards. Reduction was effected by laparotomy.

Schauta estimates the mortality of all these operations as 104, that is, 10.4 per cent.; nevertheless, in 45 cases only the death was the direct consequence of the operation.

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DEATHS UNDER ANESTHETICS: CHLOROFORM.

The reports under this heading of cases of deaths under chloroform in the *British Medical Journal* have been so frequent of late as to elicit the following note from Mr. E. C. Cripps, M.R.C.S., Eng., who writes:

"The reports of deaths under chloroform which appear in almost every number of the *British Medical Journal* form very melancholy reading. In the case reported by Mr. Coates on October 12th, it would be interesting to know why chloroform was administered in preference to ether. The heart's action was ascertained to be feeble before the operation, and there seems to have been nothing to contraindicate ether, so that the case was essentially one in which ether and not chloroform should have been used, and in all probability if it had been, the patient would have been alive now. Ether may be contraindicated in a very few instances, but in the large majority of cases it is the best and safest anesthetic, and it seems almost criminal to use in preference to it chloroform, which is five times more dangerous."

The operation was simply a sequestrotomy on a metacarpal bone, and, as Mr. Cripps says, the fact that the heart's action was noted to be feeble should have contraindicated chloroform. At the autopsy the heart walls were found flabby and thinner than normal. The valves were normal.

OBITUARY.—BENJAMIN CUSHING, M.D.

Benjamin Cushing, M.D., died at his residence on Percival Avenue, Dorchester, October 16, 1895, aged seventy-three years. Of those who knew him, there are very few, if any, who will read the above announcement without a sense of personal loss. His exalted character, his integrity, his sincerity, his desire not only to make his own life useful but to aid others in making their lives more useful, his devotion to his profession, his great abilities, his kindness and benevolent and sympathetic nature, had endeared him to all hearts. And when it came to be understood that he was stricken down with what was likely to result in a fatal disease, it seemed as though a pall of mourning had been cast over the whole profession in his neighborhood; and now, though not wholly unexpected, the sad news of his death finds us all unreconciled and all unprepared.

We must, however, find our consolation for this loss in the fact that his has been a valuable and useful life, and no misfortune can ever reach him now. He has gone in the fulness of time. He has passed his threescore and ten years. He has made for himself a place in the memories of those who knew him, that will be kept sacred till their own lives shall cease. He has ended a useful life. He has ministered to many. His name is cherished by all. Younger men in the profession owe to him a debt of gratitude that can only be repaid by imitating the example he set them, and by practising medicine along the lines of high and ennobling virtue and devotion to right principles that he taught in all his councils, and illustrated and exemplified in his life. They will have to remember forever his valuable suggestions, his ever-ready sympathy and assistance, his universal and respectful recognition of their merits everywhere and at all times.

We to whom it was given to avail ourselves in every emergency, without dread of intrusion, of his extended experience, his great wisdom and his wonderful skill, know, perhaps, better than others can know, that the community has sustained a loss that is only saved from being irreparable by the influence that he has exerted in raising the standard of professional attainment, manliness and true nobility, in his neighborhood, to a level with his own.

It is difficult to be reconciled to his departure; but it must come some time, as it comes to all. And though we would not have chosen that it should come through a lingering, wasting and painful malady, it cannot be said that it has come before its time.

With his life's work all accomplished, in the midst of family and friends, with a remembrance firmly established in the hearts and homes of the whole community, with a place secure in the front rank of his beloved profession, and with an abiding faith that something better is coming in the great hereafter, he has gone to his rest.

Honored and loved, by kindest hopes attended
Wherever he was known,
His journey done, his suffering all ended,
He laid life's burden down.

There is no better ending to this our mortal life.

W. S. E.

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Correspondence.

TOO MUCH HIGH PRESSURE AT SCHOOL.

Boston, October 28, 1895.

Mr. Editor: — Most parents think that the studies of their sons and daughters at high school are altogether too numerous and too severe. We are apt to suppose that it is the particular high school to which our young people go that is at fault; but a little inquiry shows that our neighboring academies are just as bad, or even worse, in this respect. Who are to blame for this? Certainly not the parents. The teachers disclaim the responsibility, and many of them even regret it. Therefore, in our municipality at least, we are forced to conclude that it must either be the supervisors or else that august body of irresponsible, tyrannical Solons called the *school committee.* We desire no worse punishment for such supervisors and committees than that they should be obliged to swallow the mental food which they have prescribed for the young people for three or four years. This would give them a mental dyspepsia for the remainder of their days that would surely keep them from doing any more harm of this kind.

With the exception of a few who are to become teachers, pupils are much better prepared to begin the business of life as soon as they leave the grammar school; for then they are fresh from their arithmetic and book-keeping, which are almost entirely neglected in the high schools of Boston, and what was learned of these is quickly crowded out by less practical studies. Evidently the whole plan of education hereabouts is based on the supposition that there are a few *almighty smart* scholars whom the teachers must keep ahead of, even if all the others drop out. The sooner most of them drop out the better. The great majority of pupils in humble circumstances are made dissatisfied with their lot and unfitted for useful occupations that they might easily have filled, by too much of what is called education. I remember hearing the city missionary say that most of the young people in the House of Correction were "well educated."

But this overcrowding of studies in high schools is not confined to the United States alone. It is almost universal, as is well shown by a valuable and interesting article in the *Revue d'Hygiène et Thérapeutique* for April, 1895, which tells us that in France for some time they have forgotten the campaign against intellectual overwork in order to occupy themselves with physical overwork, the effects of which are much less injurious to the individual and to the race.

The different morbid conditions arising from too much and too hurried overwork of academic teaching have been carefully investigated by M. Lagneau. At Neufchâtel, out of 731 scholars, 296 suffered from headache. At Darmstadt and at Bessingen, out of 3,568, they found 974 with headache. At Saint Petersburg, amongst 7,478 boys and girls, headache was observed in 34 per cent. of the scholars from fourteen to eighteen years of age.

In England, Dr. Crichton Brown found 46 per cent. of children suffering in the same way from too much study at school.

A study of a large number of cases of chorea by Dr. Abercrombie showed that 11 per cent. of them were due to over-much mental work. At Manchester, Dr. Ashby has observed the number of cases of chorea increase from 4 to 10 per cent. in eleven years in consequence of their system of education becoming more and more severe.

When Lord Stanley, of Alderley, brought before the High Chamber the question of overwork at school, Lord Shaftesbury, President of the Commission of Asylums for the Insane, remarked that from 32,901 teachers, masters and mistresses of schools, governesses, professors and lecturers, taken at the census of 1871, there had become inmates of aslyums in 1882, 183 patients, of whom 145 were women and 38 were men. The physicians of the Cantons of Geneva and Neufchâtel have also been impressed by the enormous proportion of young women intended for the profession of teaching which they found in insane asylums.

Intellectual overwork affects the health of young women. At Paris, M. Dujardin-Beaumetz observed that for 25 places at the Superior Normal School 500 candidates presented themselves. He was struck by the poor state of health which the majority of these young women showed — badly developed, pale blooded, chlorotic, exhibiting an excitability of the nervous system which results from excessive mental work depriving them of sleep.

This situation unfortunately grows worse. M. Taine remarked that in 1890 for 42 situations for male teachers in the Department of the Seine there were 1,847 candidates, and that for 50 places for female teachers there were 7,139 trained and licensed aspirants. In spite of this plethora of trained subjects who are unable to utilize their knowledge, they do not cease in France to increase the number of them but facilitate the instruction of unfortunate young men and women, and thus make them dissatisfied and unfit for the class from which they came. For this purpose, in place of 2,200,000 francs being paid out in 1857, the treasury of instruction moved an expense of 18,000,000 francs in 1889.

In democratic and cosmopolitan countries, such as France and the United States pretend to be, it would be wrong to deprive society of the services that might be rendered to it by rare and brilliant minds which require only the material means of perfecting their instruction. It is necessary, however, to exercise a more careful choice and to be less prodigal of the finances of the State, for the result obtained does not always correspond to the greatness of the sacrifice.

In Germany, where they encourage by generous allowances studies and researches by bright students, there is a reaction against the overproduction of learned people. A similar movement is expected in France, where are seen many young people, and especially young women, abandoning some modest and more lucrative careers in order to enter upon studies which are altogether too high and too intense for them, which compromise their health without being useful or profitable, and which are more injurious for the future of the nation than physical exercises even when they are carried to the extent of over-fatigue.

Very truly yours, Douglas Graham, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, October 19, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,892,332	714	259	12.01	12.46	4.76	1.82	3.52
Chicago . . .	1,678,967	4[illegible]7	191	32.13	8.40	10.05	6 09	13.65
Philadelphia .	1,164,000	383	129	14.31	10.00	2.70	1.89	8.37
Brooklyn . .	1,100,000	390	158	17.68	13.00	4.42	1.30	6.24
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	494,205	206	60	15.68	9.31	4.90	3.43	5.39
Baltimore . .	496,315	170	72	20.06	10.62	5.22	5.22	6.49
Cincinnati . .	336,000	80	27	6.25	11.25	—	2.50	3.75
Cleveland . .	314,537	97	35	15.48	13.39	—	2.06	12.36
Washington .	275,500	142	37	16.80	11.20	6.30	5.60	.70
Pittsburg . .	238,617	104	39	22.08	9.61	2.88	4.80	9.61
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	35	11	14.30	22.88	5.72	5.72	—
Charleston . .	65,165	42	14	16.66	11.90	9.52	2.38	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	30	8	10.00	13.33	3.33	—	6.66
Fall River . .	88,020	35	18	25.74	11.44	17.16	—	2.86
Lowell . . .	84,359	44	16	15.89	11.35	11.08	2.27	4.54
Cambridge . .	81,519	25	11	12.00	8.00	8.00	—	4.00
Lynn	62.355	16	8	12.50	18.75	6.25	—	6.25
New Bedford .	55,254	20	7	15.00	5.05	—	—	15.00
Springfield . .	51,534	14	5	14.28	14.28	7.14	—	—
Lawrence . .	52,153	—	—	—	—	—	—	—
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	11	4	—	9.09	—	—	—
Brockton . .	33,157	3	1	—	33.33	—	—	—
Haverhill . .	30,185	11	4	18.18	9.09	9.09	—	9.09
Malden . . .	29,706	11	4	18.18	18.18	9.09	9.09	—
Chelsea . . .	31,295	10	2	—	10.00	—	—	—
Fitchburg . .	26,394	14	4	—	7.14	—	—	—
Newton . . .	27,[illegible]22	13	3	7.69	15.38	—	—	7.69
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	11	1	9.09	—	—	—	9.09
Waltham . .	20,877	7	4	14.28	28.56	14.28	—	—
Quincy . . .	20,712	19	3	5.26	10.52	5.26	—	—
Pittsfield . .	20,447	5	1	—	—	—	—	—
Everett . . .	18,578	6	2	16.66	—	—	—	16.66
Northampton .	16,738	4	1	—	—	—	—	—
Newburyport .	14,554	2	0	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 3,252; under five years of age 1,175; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 571, consumption 353, acute lung diseases 329, diphtheria and croup 205, diarrheal diseases 177, typhoid fever 99, whooping-cough 35, malarial fever 18, scarlet fever 15, measles 11, cerebro-spinal meningitis 8, erysipelas 3.

From whooping-cough Brooklyn 13, New York 9, Chicago 4, Philadelphia and Baltimore 3 each, Boston 2, Providence 1. From malarial fever Washington 6, Brooklyn 5, New York and Charleston 2 each, Philadelphia, Baltimore and Boston 1 each. From scarlet fever Pittsburg 5, New York 3, Baltimore 2, Brooklyn, Boston, Nashville, Springfield and Quincy 1 each. From measles New York 6, Chicago and Brooklyn 2 each, Providence 1. From cerebro spinal meningitis Chicago 4, Providence 2, New York and Cleveland 1 each. From erysipelas Chicago, Philadelphia and Brooklyn 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending October 12th, the death-rate was 21.0. Deaths reported 4,271; acute diseases of the respiratory organs (London) 175, diarrhea 533, measles 94, diphtheria 85, fever 65, scarlet fever 60, whooping-cough 56, small-pox (London) 2.

The death-rates ranged from 8.6 in Croydon to 42.5 in Blackburn; Birmingham 22.4, Bolton 22.7, Bradford 25.3, Bristol 16.7, Gateshead 28.8, Hull 22.6, Leeds 21.6, Leicester 19.1, Liverpool 31.7, London 17.0, Manchester 28.4, Newcastle-on-Tyne 27.5, Nottingham 24.2, Oldham 21.4, Portsmouth 17.6, Sheffield 24.0, West Ham 13.4.

METEOROLOGICAL RECORD,

For the week ending October 19th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..13	29.50	54	56	53	100	100	100	N.E.	N.	36	24	R.	R.	4.85
M..14	29.85	55	62	48	73	66	70	N.W.	N.W.	23	17	C.	C.	.42
T ..15	30.09	46	52	39	72	85	78	N.W.	N.W.	8	3	O.	R.	.07
W..16	29.92	44	53	36	88	90	89	N.W.	S.E.	4	5	O.	F.	.01
T ..17	29.72	52	56	47	77	62	70	N.W.	W.	18	14	C.	C.	
F..18	30.16	44	54	35	52	52	52	N.W.	S.W.	15	10	C.	C.	
S...19	29.80	46	68	45	76	78	77	S.E.	S.W.	17	23	C.	C.	
☛														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☛ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 19, 1895, TO OCTOBER 25, 1895.

CAPTAIN OGDEN RAFFERTY, assistant surgeon, is relieved from duty at Benicia Barracks, Cal., and ordered to Fort Bliss, Texas, for duty, relieving MAJOR CLARENCE EWEN, surgeon.

MAJOR CLARENCE EWEN, surgeon, upon being relieved from duty at Fort Bliss, Texas, will proceed to San Francisco, Cal., and report to the president of the Retiring Board for examination.

The leave of absence granted MAJOR CHARLES B. BYRNE, surgeon, is extended three months.

CAPTAIN WILLIAM H. ARTHUR, assistant surgeon, is granted leave of absence for one month.

The extension of leave of absence, on surgeon's certificate of disability, granted CAPTAIN JAMES E. PILCHER, assistant surgeon, is still further extended two months on account of sickness.

PROMOTION.

CAPTAIN WM. H. CORBUSIER, assistant surgeon, to be surgeon with the rank of Major, October 17, 1895, *vice* CRONKHITE, retired from active service.

RETIREMENT.

MAJOR HENRY M. CRONKHITE, surgeon, October 17, 1895.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 26, 1895.

J. C. ROSENBLEUTH, assistant surgeon, to instruction at the Naval Laboratory.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, November 4th, at 8 o'clock.

Dr. Charles H. Williams will read, by invitation, on "Color Testing." Drs. B. J. Jeffries, O. F. Wadsworth and G. Hay have been asked to take part in the discussion.

Dr. E. H. Bradford on "School Desks." Discussion by Drs. H. P. Walcott, S. H. Durgin, C. H. Williams and E. G. Brackett.

JAMES G. MUMFORD, M.D., *Secretary*.

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION. — The regular monthly meeting of the Surgical Section of the Suffolk District Medical Society will be held Wednesday evening, at 8 o'clock, at the Medical Library, 19 Boylston Place, November 6, 1895.

Dr. Joel Goldthwaite: "Tendon Transplantation in the Treatment of Paralytic Deformities of the Feet."

Dr. George H. Monks: "A Case of Spiral Fracture of the Humerus, with Specimen."

Dr. E. G. Brackett: "Subtendinous Exostosis of the Os Calcis."

Dr. M. H. Richardson: "Three Cases of Anastomosis by the Use of the Murphy Button, with Autopsy."

Specimens illustrative of surgical pathology are now in order.

M. H. RICHARDSON, M.D., *Chairman*.
CHARLES L. SCUDDER, M.D., *Secretary*.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, November 7th, at 8 P. M., by PROF. DAVID W. CHEEVER. Subject: "Abscess." The three ensuing lectures will be delivered by Professor Cheever on the same subject, on Thursday, November 14th, Thursday, November 21st, and Friday, November 22d, at the same hour. The profession are invited.

PHILADELPHIA ACADEMY OF SURGERY.

THE SAMUEL D. GROSS PRIZE.

The second quinquennial prize of one thousand dollars, under the will of the late Samuel D. Gross, M.D., will be awarded January 1, 1900.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the successful competitor, who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to Dr. J. Ewing Mears, 1429 Walnut Street, Philadelphia, before January 1, 1900.

Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

RECENT DEATH.

SURGEON-GENERAL SIR THOMAS LONGMORE, an eminent British surgeon, died on September 30th, at the age of seventy-nine years. He had done important work in the field of military surgery.

BOOKS AND PAMPHLETS RECEIVED.

A Series of Clinical Cases. By Charles A. Oliver, M.D. Reprint. 1895.

Circular of Information for Candidates seeking Appointment in the Medical Corps of the United States Army.

Hemorrhoids; Prolapsed Rectum; New Operation. By Merrill Rickets, M.D., Cincinnati, O. Reprint. 1895.

A Plea for a Simpler Life. By George S. Keith, M.D., F.R.C.P.E. London: Adam & Charles Black. 1895.

A New Method for the Detection and Estimation of Sugar in the Urine. By Arthur R. Elliott, C.M., M.D. Reprint. 1895.

Transactions of the Association of American Physicians, Tenth Session, held at Washington, D. C., May 30 and 31, 1895. Volume X. Philadelphia, 1895.

Asexualization for the Limitation of Disease and the Prevention and Punishment of Crime. By E. Stuver, M.Sc., Ph.D., Rawlins, Wyo. Reprint. 1895.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum.......... 1
Agents Wanted..................................
Antikamnia Chemical Company...Antikamnia 2
Apollinaris Co.................................. 1
Ayer's Hygienic Coffee.......................... 1
Baker, L. W., M.D.... ....Riverview 1
Baker, Dr. W. H............................Cara 1
Battle & Co. ....Bromidia 2
Bellevue Hosp. Med. Col..... Sessions of '94-95 1
B. H. R. Distilling Co.......................... 2
Boehringer & Soehne....................Ferratin 1
Borine Chemical Co..............................7, 2
Boston City Hospital............House Officers
Bowdoin College...........Medical Department 1
Bowker, Dr. E. M.......... ......Vaccine Virus
Boylston Medical Prize Questions............
Breitenbach Co., M. J...........Pepto-Mangan
Castle, W. & Co.................Steam Sterilizer 1
Channing, Dr. Walter............................ 1
Chauncy Hall School............................. 3
Cocke, Dr. James R.............................. 1
Codman & Shurtleff......Surgical Instruments
Coll. of Physicians and Surgeons, Boston... 1
Coll. Physicians and Surgeons, Baltimore, 1
Crittenton, C. N................Hydroleine, etc. 13, 1
Cutter, Dr. W. P 1
Dartmouth College, N. H....Med. Department 1
Douglass, Dr. DeF ....Artificial Limbs
Edes, Dr. R. T.................................2, 1
Fairchild Bros. & Foster..........Milk Mixture
Farwell & Rhines...............Diabetes Flour
Feeble-Minded Youth, Inst. for..Barre, Mass. 1
Fisk & Arnold......................Artificial Limbs
Flood, Dr. Everett.............................. 1
Fougera, E. & Co............Imp'g Pharmacists 8, 9, 2
Gear, J. Frank...............Surgical Instruments
Goldthwaite, Dr. S. V........................... 1
Gould's Medical Dictionary.............. 2
Greene, Dr. E. M........Examinations of Sputa 1
Harvard Baby Food Co..........................
Harvard University........Dental Department 1
Harvard University.......Medical Department 3
Johnson & Johnson...............................Kola
Lambert Pharmacal Co...............Listerine 2
Leedom, Charles..................Nuclein Solution
Lehn & Fink...........................Mfg. Chemists 2
Lloyd, Andrew J. & Co. .....Manufg. Opticians
Londonderry Lithia Water..................... 2
Long Island College Hospital.................. 1
Mackie, Dr. L. V. G. .... Sanitarium 1
Marks, A. A......................Artificial Limbs 2
Martin, Dr. F. C...................Vaccine Virus 3
Mass. Charitable Eye and Ear Infirmary...
McArthur Hypophosphite Co.....................
McElroy, P. J.......................Glass Syringes
Medical Practices, etc..........................
Medico-Chirurgical College 1
Norton, Dr. Eben C........ ....Card 1
N. Y. Pharmacal Association....Lactopeptine 1
N. Y. Polyclinic and Hospital.................. 1
N. Y. Post-Graduate School and Hospital.. 1
Oakland Chemical Co.......Hydrogen Dioxide 3
Pabst Brewing Co................................
Patch, E. L. Co............ .....Lithia Tablets 1
Peake & Buzzell............Surgeons' Supplies 2
Pinaud, Ed...........................Sels Romains 2
Planten, H., & Son.......................Capsules
Polk, R. L. & Co........Med. and Surg. Register 2
Practice For Sale...............................
Purdue Frederick Co., The......................
Ring, Dr. Allan Mott.........Nervous Diseases 1
Russell, Dr. F. W ....Card 1
Schulze-Berge & Koechl.......Migranin, etc. 5, 3
Scott & Bowne..................... ....
Stedman, Dr. Henry R...........................Card
Stillings, Dr. L. C. ....Card 1
Strong, Dr. S. E......................Sanitarium 1
Thayer, Henry & Co............................ 2
Theodore Metcalf Co............................Coca 1
Twitchell, Dr. George B....................Card 1
Tyree, J. S. ....Antiseptic Powder 2
University of Maryland.......................... 1
University of Vermont,.......................... 1
Walker Pharmacal Co..................Phytoline 1
Walnut Lodge Hospital........................... 1
Warner, Wm. R., & Co.................. .Pills, etc. 1
Waterman, Dr. Thomas..Animal Vaccine Virus
Weeks & Potter Co. ....Quinona
Weinhagen, H.....................Thermometers
Wheeler, Dr. T. B............... ...Phosphates 1
White, Dr. Walter H.........................Card 1
Willard, Dr. A. J...............................Card 1
Woman's Hospital, Lowell................ 1
Woman's Medical College, Baltimore....... 1
Woman's Med. Coll..of the New York Infirmary 1
Woodward, L. F. ....Stammering 1
Yale University..........Medical Department 1

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Every candidate for admission, not holding a degree of arts or science, must pass a written examination on entrance to this School, in English, Latin, Physics, General Chemistry and any one of the following subjects: French, German, Elements of Algebra, or Plane Geometry, Botany. The admission examination for the coming year will be held June 25, at Boston, Quincy, Andover, Groton, Southborough, Worcester, Mass., Exeter, Concord, N. H., New York, Albany, Buffalo, Philadelphia, Washington, Cleveland, Cincinnati, Chicago, St. Louis, Minneapolis, Denver, San Francisco, Portland, Oregon, Bonn, Germany, and Tokyo, Japan; on September 23, at Boston, only. On and after June, 1896, an examination will be required in the following subjects: 1. English. 2. Latin. 3. Physics. 4. Chemistry. 5. Either French or German. 6. Algebra, Plane Geometry or Botany.

Instruction is given by lectures, recitations, clinical teaching and practical exercises, distributed throughout the academic year. In the subjects of Anatomy, Histology, Chemistry and Pathological Anatomy, laboratory work is largely substituted for, or added to, the usual methods of instruction. The year begins September 26, 1895, and ends on the last Wednesday in June, 1896, and is divided into two equal terms.

Students are divided into four classes, according to their time of study and proficiency, and during their last year will receive largely increased opportunities for instruction in the special branches mentioned. Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for admission to the advanced classes must pass an examination in the branches already pursued by the class to which they seek admission.

Beginning with the academic year 1892-3, the required course of study in this school was made a graded course covering four years. The degree of Doctor of Medicine *cum laude* will be given to candidates who have pursued a complete four years' course, and obtained an average of 75 per cent. upon all the examinations of this course.

ORDER OF STUDIES.

For the First Year.—Anatomy, Physiology, Histology and Embryology, Hygiene, Bacteriology and Medical Chemistry

For the Second Year.—Anatomy, Pathology and Pathological Anatomy, Clinical Chemistry, Materia Medica and Therapeutics, Theory and Practice, Clinical Medicine, Surgery and Clinical Surgery.

For the Third Year.—Theory and Practice, Clinical Medicine, Surgery, Clinical Surgery, Obstetrics, Pediatrics, Dermatology, Neurology, Gynæcology, and Mental Diseases.

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PAGE

ORIGINAL ARTICLES.

Endocarditis and Intermittent Fever. *By George Dock, A.M., M.D.*, Ann Arbor, Mich., Professor of Medicine in the University of Michigan 457

The Diagnosis of Pachymeningitis Interna Hemorrhagica. *By W. N. Bullard, M.D.*, Boston 461

CLINICAL DEPARTMENT.

Three Cases of Extra-Uterine Pregnancy. *By F. W. Johnson, M.D.*, Surgeon, Gynecological Department, St. Elizabeth's Hospital; Surgeon, Gynecological Department, Carney Hospital, etc. 464

Better than Cannon-Balls for Constipation. *By Douglas Graham, M.D.*, Boston 466

MEDICAL PROGRESS.

Recent Progress in Otology. *By Clarence J. Blake, M.D.*, Boston 467

Catarrhal Affection of the Eustachian Tubes. —Inflammation of the Ear caused by a Carious Tooth.— Serous Meningitis caused by Chronic Disease of the Ear.— Opening the Mastoid.— Intracranial Complications of Otitic Origin.— Operation for Relief of Suppurative Discharge. — Removal of the Malleus and Incus in Chronic Suppurative Disease of the Middle Ear.

REPORTS OF SOCIETIES.

American Gynecological Society. Twentieth Annual Meeting, Baltimore, May 28, 29 and 30, 1895 469

The Renal Catheter and its Use in the Diagnosis and Treatment of Renal Diseases.—Further Experience and Observations in Hysterectomy for Fibroids.— The Use of Traction and Morcellation in the Removal of Fibroids *vs.* Hysterectomy.—Ligation of the Pedicle with Catgut.— The Present Treatment of Uterine Displacement. — Experience with Ventro-Fixation and Alexander's Operation.—Alexander's Operation.

RECENT LITERATURE.

A Clinical Manual of Diseases of the Eye, including a Sketch of its Anatomy. By D. B. St. John Roosa, M.D., LL.D. New York: William Wood & Co. 472

A Text-Book of Practical Therapeutics. By Hobart Amory Hare, M.D., B.S.C. Philadelphia: Lea Brothers & Co. 1895 473

Twentieth Century Practice. Edited by Thomas L. Stedman, M.D. Volume III. New York: William Wood & Co. 1895 473

EDITORIALS.

Permanganate of Potash as an Antidote for Morphine Poisoning 474

The Signs of Death 475

Medical Notes 475

Annual Mortality from Snake Bite in India. — Vomiting by a New Method.—The Tri-State Medical Society.— Kaffir Gold for the London Hospitals.— Medical Schools of Philadelphia. — The American Association of Obstetricians and Gynecologists. — Physicians and Poetry. — The Effects of the Modern Military Rifle.

New England.

Acute Infectious Diseases in Boston. — Another Fatal Knock-Out Blow.

New York.

The Deaf and Dumb in America.—The New York Obstetrical Society.—The Commissioners of Charity and Correction Criticised.—The Pauper Insane Again.— A Fatal Jump.— Suicide of Dr. Carpenter.— Death at the Age of One Hundred and Five Years.—Opening of the Craig Colony for Epileptics.

CORRESPONDENCE.

The Study of Dermatology in Europe. *Charles J. White, M.D.*, Boston 478

MISCELLANY.

Therapeutic Notes 477
Meteorological Record, October 26, 1895 480
Record of Mortality, October 26, 1895 480
Army, Navy and Marine-Hospital Services. 480
Harvard Medical School. Evening Lectures 480
Recent Deaths 480
Books and Pamphlets Received 480

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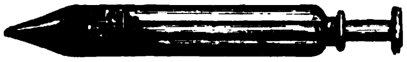

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Original Articles.

ENDOCARDITIS AND INTERMITTENT FEVER.

BY GEORGE DOCK, A.M., M.D., OF ANN ARBOR, MICH.,
Professor of Medicine in the University of Michigan.

Although intermittent fever is one of the rarer masks under which malignant endocarditis appears, it is practically one of the most important. If an endocarditis be mistaken for sepsis or for typhoid fever, the fatal issue is not so unexpected and the intractable course so inexplicable as when malarial disease is the diagnosis. Three cases with intermittent fever under the writer's observation have emphasized the importance of this form in prognosis, and the diagnostic aspects presented are so valuable that I think no apology is necessary for publishing them.

Case I. Malignant endocarditis affecting the mitral valve and the left auricle, developing post-partum. Intermittent fever (so-called "obstetrical malaria").

Mrs. N., age twenty-six years, married two years, confined January 16, 1895, at term, after normal (first) pregnancy. The second stage of labor being prolonged, chloroform was given and the child delivered by forceps. A slight laceration of the perineum was sewed at once, and healed quickly. Recovery was slow; the patient had no milk; but at the end of three weeks she felt so well that she went sleighing. After that she remained in bed, having failed to increase in strength, and for more than two weeks had chills, fever and sweating almost every day. About the time fever began there was pain referred to the sciatic nerves at their point of exit from the pelvis. During this time, the family physician being away, another one was called in. He treated the patient for malaria, but without effect. An eminent laparotomist was then called in consultation, and after a thorough examination of the pelvic organs rejected the idea of sepsis, which he entertained on hearing the history, and asserted the case was one of malarial fever. Quinine was administered again, in large doses, but without checking the chills and fever. The family physician then returned and took charge of the patient. He then discovered a heart-murmur which was not present at the time of delivery. This had also been heard by the consultant mentioned, who held it to be anemic.

As the physician suspected sepsis and was unwilling to continue anti-malarial treatment without a positive diagnosis, I was asked to see the patient and did so March 2, 1895. The day before there was a chill, with temperature rising to 105° F., and followed by sweating. No quinine had been taken for several days. The patient was very pale, not anxious looking, much interested in the examinations and very sanguine of recovery. There was only slight emaciation. The skin was moist, without trace of jaundice. There were no hemorrhages. There was a slight effusion in the right knee-joint, without pain, which had not been noticed before. The feet were painful, but not swollen. The patient said she had had fugitive painful swellings in the fingers. There was a heaving impulse in the cardiac area, with exaggerated apex-beat in the left fifth interspace in the nipple line. The heart dulness extended to the third rib, to the middle of the sternum and to the left as far as the apex. The heart-beat was regular; there was a slight thrill over the apex. The radial pulse was 80, small and soft. There was a loud grating or whirring, systolic murmur, loudest over the apex but heard all over the thorax and in the axilla and back. There was also a soft systolic murmur along the left edge of the sternum. At the aortic and pulmonary areas the sounds were normal. Examination of spleen, liver, lungs and pleura were negative. Palpation of abdomen negative. The urine was pale; specific gravity 1.010; no sugar nor albumin; a slight excess of leucocytes; no blood; no casts. The appetite was good; bowels slightly constipated; tongue healthy looking.

Examination of the blood for evidences of malaria was negative. There were no parasites, no pigment. The red blood-corpuscles were normal in appearance, though somewhat reduced in number. The polynuclear leucocytes were slightly increased. Fearing to alarm the patient by prolonging the blood examination, counts were not made. Inquiry into the antecedents brought out the statements that the patient had always been healthy, but had had scarlatina in childhood and pneumonia at fifteen years. After pneumonia the patient was told that "her heart had been affected," but she never had any symptoms at all and examination by two physicians previous to giving chloroform failed to reveal evidences of cardiac lesion at the time of confinement.

The diagnosis was malignant endocarditis affecting the mitral valve, with regurgitation. The cause, puerperal infection, probably assisted by an old symptomless lesion of the mitral. It became necessary to explain to the family the possibility of infection even with the greatest care, without visible local lesion in the pelvis, and to take away from the forceps delivery all blame.

Certain general principles applying to the diagnosis of malaria which I have frequently had occasion to mention on similar occasions came up in the consultation. The substance of the matter may be stated as follows: In this latitude no one has malarial fever in winter who has not had an attack in the previous summer or fall. The patient had never lived in a malarial locality and never had malarial disease. Still, as I remarked then, it is impossible to exclude exceptional instances, so that in such a case as the one before us it is proper to consider malaria as possible and microscopic examinations are then of decisive value.

The prognosis was unfavorable as to recovery, uncertain as to duration. The bad prognosis was based on the condition of the heart and strong probability of metastasis. The possibility of recovery from malignant endocarditis came up; and while admitting the possibility, I held it to be more than we could expect in this case. The treatment recommended was a supporting and symptomatic one.

For some time before I saw the patient a careful record of temperature had been kept. This was continued by the very competent nurse who carried out treatment under the direction of the family physician.[1] From the 23d of February to the 10th of April, there was an intermittent or remittent fever, as shown by the thermometer, but this had probably existed two weeks longer. The accompanying chart shows the characteristics of the fever, and though not so long in duration as in some other reported cases, it is nevertheless one of considerable interest. For the most

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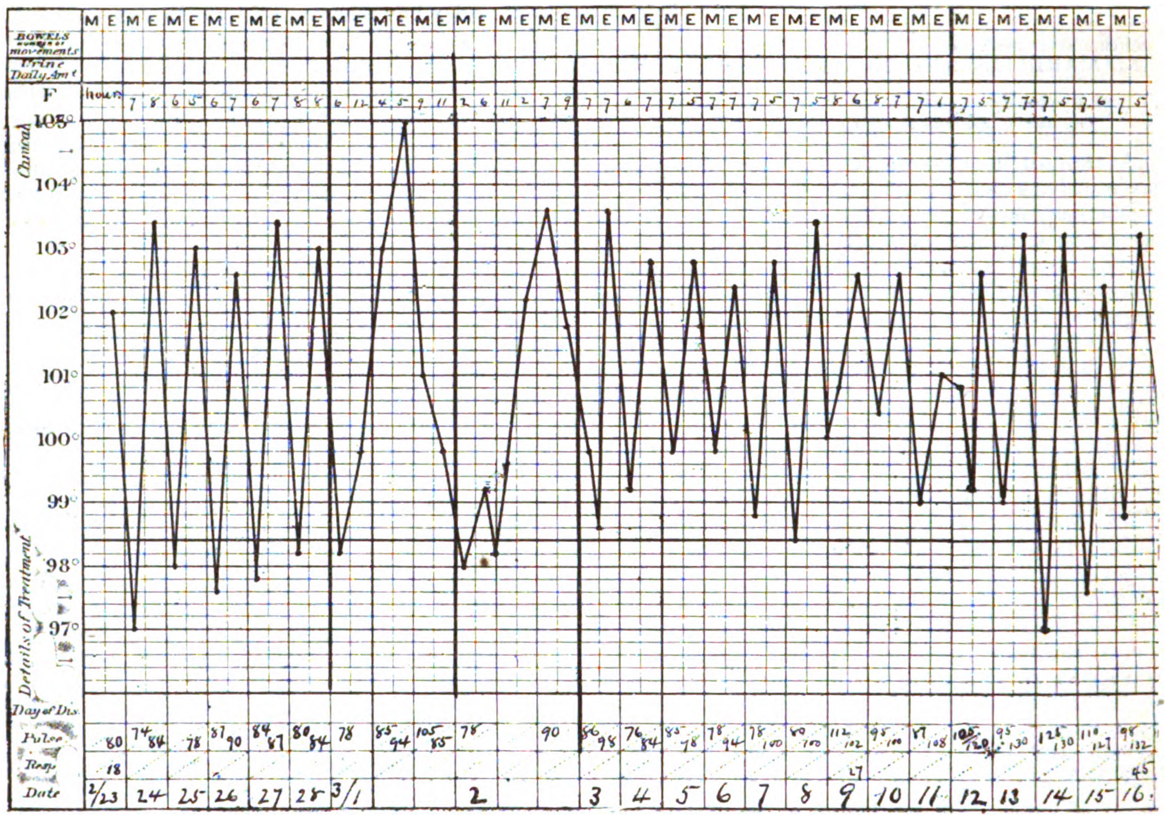
[1] For family reasons I have been requested to suppress all names, a thing I only regret having to do because it prevents me from giving credit to a worthy and judicious colleague.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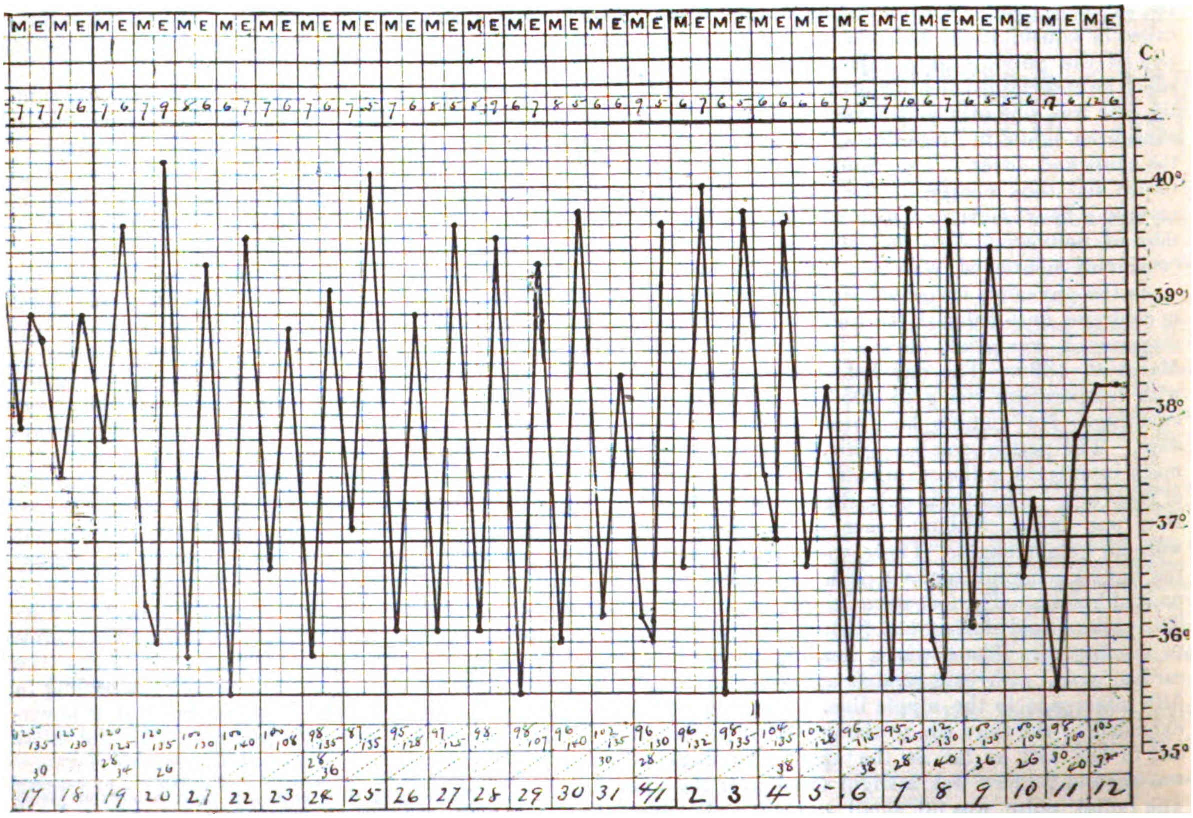
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part it shows a pure intermittent, but in the early part there was a tendency to remission or even to a continued type. Only the highest and lowest daily temperatures are here given, except on two days when I have given all the observations in order to show the daily curve. The temperature was rarely taken at night, as the patient usually slept. The temperature was unaffected by internal antipyretics, the only thing used for high temperature being sponging with water or alcohol. The rise of temperature usually occurred about noon and reached its acme about five, sometimes one or two hours later, and after remaining about the same point one or two hours fell rapidly, usually reaching normal by midnight. Toward the last, subnormal temperature, to 96°, often occurred. Chills were not constant, though very common, coming on early in the rise of temperature and of short duration. Sweating was almost always present in the decline. During the apyrexia, even up to the last days, the patient felt very well, though weak. The pulse was remarkably steady during the early part of the disease, but early in March became frequent with the rise of temperature, and was often far out of proportion to the temperature. At the same time the pulse became frequent the respiration became irregular, and dyspnea was frequent, without physical signs in the thorax to account for it. Pain in the knees, ankles, feet and hands, and itching of the skin were frequent. The patient had at times a curious sensation as if her hands were getting large. There were never hemorrhages in the skin, but shortly before death the urine became bloody. Finally appetite was lost, nausea and vomiting began, there was difficulty in swallowing, and with gradual loss of strength, with Cheyne-Stokes breathing for several days, death occurred April 13th.

An autopsy was made at the request of the family. The points of present interest only are given. The genital tract showed no evidence of infection. The lungs and pleuræ presented no lesions. The heart was large in comparison with the size of the patient, and weighed eight ounces. The pericardium showed no change. The left ventricle was 10 centimetres long, the wall 18, 12, and 5 millimetres thick at the upper end, middle and apex respectively. The endocardium for the most part was normal, the muscle pale and flabby; no miliary abscesses. The aortic valves were normal, with the exception of a soft vegetation two millimetres in diameter on the nodule Arantii of the posterior segment. The aorta was narrow (six centimetres), its intima smooth. The mitral orifice admitted two finger-tips. The anterior flap of the valve was smooth on the ventricular surface. On the auricular side, on the outer half, was a mass of vegetations 18 millimetres high, 17 millimetres wide and 10 millimetres thick, projecting at right angles to the surface of the flap. Around it were a few vegetations the size of small pin-heads. The posterior flap was retracted and thickened to five millimetres on the edge, smooth and hard in part, but the rest of it covered with vegetations the size of pin-heads. There were also many very small vegetations on the endocardium behind the flap, on the fleshy columns and even on the tendinous cords. The left auricle was dilated and hypertrophied. On the endocardium near the opening of a pulmonary vein was a triangular, warty mass of vegetations, the sides of the triangle being one centimetre long, the height of the mass three millimetres. The right auricle and ventricle were not perceptibly altered in size, their walls were slightly hypertrophied. The tricuspid admitted three finger-tips.

Microscopic examination of a piece of the left auricle with vegetations showed necrotic endocardium in intimate connection with a mass of fibrin in coarse masses and meshes. The fibrinous meshes contained numerous blood plates, a few irregular and fragmented nuclei and large numbers of streptococci in short chains, forming masses on the free edge. In the wall was a minute focus of small cells with irregular nuclei and containing a few streptococci. There were no masses of cocci in the capillaries, and none could be found in the blood in the vessels of the wall. The wall showed besides considerable swelling of the subserous tissue with numerous fibroblasts penetrating the fibrin masses, but without new-formed vessels.

The autopsy therefore confirmed the diagnosis in every particular.

The cardiac lesion is interesting in connection with the physical signs. The masses of vegetations on the mitral flap must have caused insufficiency by preventing closure of the valve. The absence of a murmur of stenosis may be explained by the fact that in diastole there was sufficient room for the blood to pass, while at the same time weakness of the auricular wall prevented the current from impinging on the projecting mass with sufficient force to cause a murmur. The soft murmur heard along the left edge of the sternum may have been due to the small vegetation on the aortic valve, or, as thought during life, to relative tricuspid insufficiency.

The other two cases were reported in the Philadelphia Pathological Society, where the specimens were shown a short time after they were obtained. Owing to some oversight they have never been published in the Transactions of the Society, but are, I think, of sufficient importance to permit publication even at this late day.

Case II. Chronic cystitis; intermittent fever; hemiplegia; edema of lungs. Double mitral lesion; thickening of aortic leaflets; streptococcus vegetations on mitral; infarcts of spleen and kidney.

A. C. M., thirty-five years of age, merchant, native of Philadelphia. Family history negative. Moderate drinker; no history of syphilis. When eighteen years old, patient fell and injured the deep urethra. At twenty had pneumonia, and since then has always been short of breath. After that had several attacks of gonorrhea, and since then has had frequent urination, and at times retention. Eight years ago a stricture was cut. Retention ceased, but frequent urination continued. There has been no urethral discharge for eight years.

Since November, 1887, patient has had chills, fever and sweating, at irregular intervals. Lately emaciation and weakness have been marked, but even in the beginning the patient spent a large part of the time lying down. He disclaimed feeling ill, and said he only felt tired. He was under treatment all the time by various physicians. Some of them thought he had malarial fever, others tuberculosis.

April 7, 1888, M. applied for treatment at the medical dispensary of the University Hospital, where my friend and then colleague Dr. M. H. Fussell examined him. He was then emaciated, pale and sallow, but not jaundiced, not cyanotic, without edema. The apex-beat was in the fifth interspace in the nipple line, with corresponding enlargement of the area of cardiac dulness. The apex-beat was normal. There was a rough presystolic murmur confined to the region of the apex; another systolic, high-pitched, transmitted in all directions, loudest over the apex. The spleen was slightly enlarged. Dr. Fussell and I examined the blood for evidence of malaria, which, however, was not present. The diagnosis was malignant endocarditis. We saw the patient together at the dispensary a few times after that.

On April 29th, M. had a chill, followed by pain in the left side, vomiting and prostration, and in the following night mild delirium. Next day I was sent for, and found the man lying in bed, bathed in sweat, his expression anxious. He complained of pain in the left side, increased by motion and pressure. The spleen could be plainly felt two inches below the ribs, being larger than before. There was a localized point of tenderness just below the costal margin. The signs about the heart were as before. Temperature 101.5°, pulse 96, respiration 30. (The pulse had not been accelerated at any time.) I made a diagnosis of infarct of the spleen, and ordered absolute rest, milk diet and salol. The urine examination before was negative, now there was an excess of leucocytes, and the freshly-passed urine contained large numbers of streptococci. The temperature fell to normal, the tenderness over the spleen lessened; the salol was stopped. The patient felt so well he was kept in bed with difficulty.

May 5th, about six A. M. the patient was left alone a few minutes. When the attendant returned he was found on the floor, having risen apparently to urinate. He complained of pain in his heart. Soon after that his voice became thick and he had to communicate in writing. The writing soon became unintelligible. At ten o'clock I found the patient conscious, apparently recognizing me, but not able to signify whether he could understand me. The left side of the face and left arm were powerless and flaccid, the left leg stiff and motionless. The face was anxious, the skin cold and covered with sweat. The apex-beat strong, radial pulse 100, rapid, almost fluttering. There were numerous loud râles all over the chest, audible at a distance. The patient clutched at the heart region with the right hand. Soon after I arrived conjugate deviation came on. The pulse became more frequent, cyanosis developed rapidly and death occurred about noon.

Autopsy showed edema of the lungs. The heart was dilated and hypertrophied. The mitral valve was contracted, not admitting two finger-tips, the leaflets thickened. The edges of the valve were surrounded by a mass of greenish vegetations, measuring from one and a half to two and a half centimetres in length, four millimetres in thickness. A few small vegetations on the tendinous cords.

The spleen measured 25 by 12 by 5 centimetres. It was pale, with white opacities and bluish-red flat elevations of the capsule; the upper end attached to the left lobe of the liver by old adhesions. The cut surface pale, very soft. The bluish elevations were due to the presence of five infarctions, of the color and consistency of normal spleen tissue, with an injected area around each one. The largest one, about the size of a walnut, was in the position which was painful and sensitive during life. There were also three old and contracted infarcts in the upper part of the spleen. The kidneys were normal in size and appearance, save for the presence of three old infarcts in the left one.

The bladder walls were thickened. On the mucous surface a few small bits of pus. The ureters normal.

The liver, slightly enlarged, showed mild nutmeg change.

The brain could not be examined.

Microscopic examination of the mitral vegetation showed a fibrous and hyaline mass, covered with endothelium in some places, in others by a mass of leucocytes, fibrin and cocci. The cocci were in short chains. In the mass were small calcareous particles.

The heart was taken to the laboratory unopened, and after opening it with aseptic precautions cultures were made from the inner parts of the mass of vegetations. These gave a pure culture of streptococcus pyogenes.

In this case we have again the combination of old lesion of the valves and infection, the latter taking place from the bladder or urethra. The clinical history, as described by the patient, was quite like that of malarial fever, and the fact that he was exposed to malaria by business trips to the Chesapeake Bay made that diagnosis all the more probable to the various physicians consulted.

Case III. Intermittent fever; jaundice; Malignant endocarditis affecting bicuspid aortic valve; dilatation and hypertrophy of heart; atheroma; contracted kidneys; nutmeg liver; infarct of spleen; edema of lungs.

N. M., aged forty-two, well-to-do mechanic. Previous health good so far as can be ascertained, although life insurance was refused fifteen years before death on account of alleged heart disease. For some time patient was treated by a skilful and experienced physician for malaria. Later, from the occurrence of jaundice an hepatic complication was suspected, and the patient was seen by Dr. D. Hayes Agnew, who concurred in the diagnosis of malaria. The patient gradually grew weaker, and died rather suddenly with asphyctic symptoms. Dyspnea had not been noticed before.

I was asked by the attending physician to make an autopsy. The body was well nourished, there was slight jaundice; no edema; no hemorrhages.

The lungs were extremely edematous.

The heart weighed thirteen ounces, the cavities all dilated. The mitral admitted three fingers, the flaps were slightly atheromatous. The aortic valve had two cusps, the anterior segment showing a rudimentary septum. On the fused leaflets was a firm, whitish vegetation, extending to the insertion of the flap.

There was slight atheroma of the aorta.

The spleen, of normal size and appearance, contained an old infarct in the upper end.

The kidneys were small, red and granular.

The liver was much enlarged, with marked nutmeg change.

The vegetations had a microscopic structure similar to the others and contained masses of streptococci.

In this case the mode of infection could not be discovered. The autopsy disclosed no other focus of infection. The predisposing cause was, no doubt, an atheromatous change in the aortic valve. As is well known, bicuspid arterial valves seem especially prone to disease.

The simulation of malaria was well marked, in fact, so much so that no differential diagnosis was made. No doubt, careful examination of the heart would have called attention away from the other symptoms, at least temporarily; yet even if the signs of valvular disease and enlargement had been discovered, they might not have been brought into connection with the fever, for at that time the symptoms of sepsis in general and of septic endocarditis in particular were even less known than they are at present. In both of the last two cases the intermittent fever had a duration of many months, but as the temperature was not recorded it is impossible to know the details.

The cause of the peculiar temperature curve in this disease is not known. It will be remembered that Cohnheim accurately explained the cause of intermittence in malaria as being due to the nature of the infecting agent, as we now know to be the case. Cohnheim thought that the intermittence of pyemic and septic fever was due rather to an intermittent intoxication from a continuous source: "the fever is not continuous, because such focci do not produce fever *per se*, but only because their constituents enter the circulation. This is not necessarily continuous, but may be influenced by various circumstances."[2] In cases such as those here reported this explanation does not seem tenable. It is difficult to imagine that the poisons elaborated in the vegetations enter the circulation intermittently as supposed by Cohnheim, but more reasonable to believe, as was suggested by Murchison in his classical article on the subject[3] and expressed by Musser in his valuable contribution,[4] that the "phenomenon of intermittency is due to rhythmical responses of the nervous system to a constantly-acting poisoned blood."

While the examination of the blood in such cases is the most certain element in the exclusion of malaria, other diagnostic differences are illustrated by the histories given above. One of the most striking symptoms in the cases seen by me was a marked weakness, a constant fatigue. In Case I the patient felt as well as she could wish during the apyrexia, but she was too weak to do anything. This is in marked constrast to malaria where, even if the temperature goes one or two degrees higher than it did in this case for many days, the patient not only feels well in the interval, but is actually able to do a considerable amount of manual or mental labor until advanced anemia prevents him. As regards the characteristics of the fever itself, the temperature is not so high as is common in malaria, and I do not think the other symptoms of the attack are usually as marked as they are in malarial fever with a similar temperature.

Hospital Advertisements.— The *London Times* of July 23, 1895, contains the following:

> Anybody in London having spare time on Monday, 22d, or Tuesday, 23d, July, is invited to visit the Poplar Hospital for Accidents between 2 and 7 o'clock.
>
> Newly built. Newly fitted. No debt. No horrors. No infection.
>
> Best Way.— Drive or bicycle, forty-five minutes from West End.
>
> Another Way.— Blackwall Omnibus from Piccadilly Circus, seventy-five minutes.
>
> Another Way.— Train to Aldgate, thence by yellow tram.

THE DIAGNOSIS OF PACHYMENINGITIS INTERNA HEMORRHAGICA.[1]

BY W. N. BULLARD, M.D., BOSTON.

In making use of the term "Pachymeningitis interna hemorrhagica" I do not intend to imply belief in any theory of the pathology of the condition to which this name has been applied. I have only used it as a common and convenient designation for a well-known condition.

In this short paper I have no intention of entering into the etiology or pathology of this affection. While the exact method of production of the membranes is still under discussion and cannot be considered as absolutely settled, it, nevertheless, seems to me that the weight of evidence and probability is in favor of the view that the hemorrhage is primary and that the origin of the membranes is not inflammatory. In other words, this affection should be classed as one of the many forms of intracranial hemorrhage.

Of this condition itself there are several varieties, varying in their etiology and the conditions under which they occur.

First, we have the more or less pure traumatic cases in well-grown children or adults, in which trauma is undoubtedly the exciting cause of the hemorrhage, whatever may have been the pre-existing conditions. We ourselves believe that dural hemorrhage may occur in such cases from a normal dura and without any pre-existing membrane.

Secondly, we have those cases which occur in infants and which are undoubtedly due in most, if not all, cases to continued pressure against the cranium during birth or to other similar traumatic causes. These cases may be noticed immediately after birth, or, they may not be detected until some weeks or months later, and, again, probably a very large proportion of these cases which are not fatal remain unrecognized by the ordinary physician or even by the specialist.

The third form of hemorrhages from the dura or from its derivative membranes is that to which the term "pachymeningitis interna hemorrhagica" has been more especially applied. This is an apparently spontaneous, idiopathic, non-traumatic affection occurring in adults and, more especially, in those in advanced life. It is largely confined to those in whom some chronic cerebral disease exists and those in whom there is some weakening of the intracranial or meningeal blood-vessels. It is a condition found principally in the chronic insane, in persons affected with paralytic dementia, or in those who are suffering from chronic alcoholism.

It is this form only of this affection which I propose to consider to-day. As seen by the general practitioner and in the general hospitals it is undoubtedly rare, and even in its more severe forms is probably often unrecognized. Gowers says "that during forty years the (London) Pathological Society has received no specimen from any London hospital."

Osler states that during eight years no case was seen in the post-mortem room of the General Hospital of Montreal, while he himself had been interested in pathology for fourteen years before he saw a case.

On the other hand, at the Philadelphia Hospital it is seen two or three times a month, usually in patients from the Department for the Insane (Osler). Wiglesworth found 42 specimens in the insane from 400 unselected autopsies. Bondurant, out of 92 autopsies at the Alabama Insane Hospital, had eight cases.

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[2] Vorlesungen über allg. Pathologie, 2 Aufl., ii Bd., p. 558.

[3] Lancet, 1879, vol. i, pp. 417, 453.

[4] On Paroxysmal Fever — not Malarial, 1884.

[1] Read before the American Neurological Association, June 7, 1895.

The diagnosis of this form of this affection varies according to the amount of the hemorrhage, its rapidity and other conditions. In those cases in which the hemorrhage has been slight and in which after death only membranes with or without traces of hemorrhage are to be found, the diagnosis during life is, as a rule, with our present knowledge impossible. I firmly believe, however, that in many cases with more exact and careful study and observation of the physical conditions of the chronic insane, we shall be able to find guides to the existence of this condition during the life of the patient and be able to weigh the probabilities of its existence in special cases.

In the cases where the hemorrhage is of moderate amount or where it is profuse, the diagnosis, although always difficult, is more easy. This is especially the case where we have several hemorrhages within short periods of each other.

Where the patient is insane or demented, the symptoms of the hemorrhage, even when considerable in amount, may be so masked by the insanity or dementia as to pass unnoticed. The insane or the demented frequently do not mention and perhaps do not realize the ordinary sensations, so that for the purposes of clinical diagnosis they must be placed in the same category as infants unable to give expression to their feelings. In some ways, indeed, they are even less to be relied upon than infants, for the latter can express their pain in some unmistakable manner, although they cannot describe it, while the demented may not even give expression to pain. Nevertheless, it is probable that even in the demented a closer and more accurate observation will enable us often to diagnosticate, or at least to suspect, this condition.

It is, however, in the more simple and evident cases that the diagnosis should be made by every competent specialist.

The symptoms on which we must rely are in the more severe cases those of intracranial hemorrhage. Our principal care is to distinguish this from the other forms of intracranial hemorrhage.

In the first place, the form of this affection which we are now considering is found largely in adults who have passed the age of forty-five, and more especially in those, not insane or demented, who have passed the age of sixty. It is especially common among the chronic insane and in paralytic dementia. It is found not rarely in chronic alcoholism. When, therefore, apoplectic symptoms occur in paralytic dements or in the chronic insane, we should bear in mind the possibility that the hemorrhage may be of this character, whatever the age of the patient. The same holds good, though to a lesser degree, in regard to the chronic alcoholics, and in them it also is to be distinguished from the acute edema of the brain. As shrinking or atrophy of the brain, together with disease of the walls of the blood-vessels, appear to be important factors in the production of subdural hemorrhage, we are justified in being on the watch for it wherever these conditions occur.

Brain atrophy or shrinkage, when it has lasted for a considerable period, seems to produce a strong tendency to this affection. The same cannot be said of the weakening of the walls of the intracranial blood-vessels alone, because if they are weakened, as is usually the case, especially at the base or throughout the intracranial cavity, the hemorrhage is likely to occur in other places than beneath the dura. If, however, weakening of the walls of the blood-vessels occurs in combination with other causes which lay special strain upon the meningeal vessels, we are probably more likely to have subdural hemorrhage than where the vessel-walls have their normal resistance. It is this combination of unfavorable conditions which seems to produce at times this form of hemorrhage in chronic alcoholism. When for any reason there is special strain upon the meningeal blood-vessels and when their resisting powers are not great, an agent which under normal conditions might not be sufficient to produce serious results may now cause this affection. Thus, blows on the head, apparently not so severe as to cause trouble in the healthy or normal, may in the class of persons mentioned serve as the cause of subdural hemorrhages.

Subdural hemorrhages in the adult are to be distinguished from other intracranial hemorrhages also by the character of the symptoms. In the non-traumatic form they are apt to appear rather more slowly than intracerebral hemorrhages. In many cases the patient at first has only more or less vague symptoms pointing to the head, general confusion, stupidity and drowsiness. Sometimes severe headache occurs, but this is not invariably the case. Gradually, in the course of some hours or two or three days, the patient becomes more drowsy, unconscious, and general convulsions or localized twitchings occur.

Paralysis may or may not be present, but is rather apt to be a late symptom. Contraction of one or more limbs is not rare and is characteristic.

The most important symptom, as regards diagnosis, is the late appearance of the paralysis. There is no other ordinary form of intracranial hemorrhage in which the patient so gradually loses consciousness, and in which the paralysis (hemiplegia) comes on so long after the onset of the first symptoms. This may occur in ingravescent apoplexy where the hemorrhage is intracerebral, but this condition is not common and may be distinguished in other ways. On the other hand, we must remember that the paralysis does not always come late in this affection. It may occur early, or it may be already present when the final attack occurs.

This brings us to the second symptom of value in differentiation, repetition or multiplicity of attacks. When a patient has one attack following another, especially when the second occurs very shortly after the first, this form of trouble should be considered. If in both attacks the symptoms have come on gradually, we have strong evidence of subdural hemorrhage.

A marked characteristic of the actual symptoms of subdural hemorrhage is the preponderance of the irritative symptoms. A large proportion of the patients have either general convulsions of an epileptiform character or localized clonic spasms or twitchings of a portion of the face or one or more limbs. These symptoms occur early, and are apt to continue until the late symptoms — those of compression — appear. More characteristic than anything else is the existence of early stiffness and rigidity in one or more limbs.

This apparently in many cases precedes any marked paralysis of the affected limb. When it exists it is almost diagnostic of this condition.

As is apt to be the case in many irritative conditions, the pupils, especially in the early stage, are frequently contracted. In many cases, however, they are unaffected, and are equal and normal. Fraenkel has called attention to the absence of affections of the cranial nerves in this form of hemorrhage, due to the the fact that the blood does not reach the base of the skull, and hence does not exert pressure upon them.

We may, then, sum up the points of differential diagnosis between idiopathic subdural hemorrhage in the adult and the other forms of intracranial hemorrhage as follows:

(1) Subdural hemorrrhage is peculiarly common in paralytic dements and in the chronic insane, and it is not rare in chronic alcoholics.

(2) In many cases its onset is more gradual than in ordinary intracerebral hemorrhage, and the irritative stage lasts an unusually long time.

(3) Irritative symptoms are prominent. General epileptiform convulsions and localized convulsive movements are apt to occur.

(4) The peculiar rigidity localized in one limb, when occurring in connection with symptoms of hemorrhage and where no affection like tubercular meningitis exists, is almost pathognomonic.

(5) The absence of affections of the cranial nerves is to be considered as in favor of this form of trouble.

It must not be forgotten, in making our diagnosis, that in many cases subdural hemorrhages have been found in company with intracerebral hemorrhages, either old or recent.

The great importance of the diagnosis in these cases of subdural hemorrhages lies in the fact that many of them are probably susceptible to proper treatment, and their immediate fatal effects can be prevented. We cannot probably as yet prevent the recurrence of new hemorrhages later.

To illustrate my meaning, I will relate the following case which occurred in my service at the Carney Hospital:

On the 10th of May, 1893, the patient, a man about sixty-five years of age, was brought into the hospital unconscious, and without any history except that he had been for several days in his present condition. He now lies in bed, stupid, somnolent, unable to answer questions, more or less restless at times and delirious. He moves all his limbs, and occasionally throws himself about on the bed.

Physical examination shows a drooping of the right eyelid and a divergence of the right eye. He cannot be induced to protrude his tongue. There is free voluntary movement of all the limbs, but the left upper extremity seems stronger than the right. The grasp is fair on both sides. On account of his mental condition sensation cannot be fully tested: responses to stimuli are everywhere diminished, but more on the right trunk, extremities and face than on the left. The knee-jerks are absent. There is no tenderness about the calves or tibia. The urine contains a slight trace of albumin and some hyalin and fine granular casts. Heart negative.

During the course of the day we obtained the following facts: The patient had used considerable alcohol for the past three years. He had, however, been in fairly good health, and had worked up to eight days ago. For some years he had occasional attacks of rheumatism. On the 3d (seven days ago), Sunday, he fell down unconscious. On the 5th, he was better, and recognized his sister. At this time there was partial paralysis of the right limbs, which gradually largely disappeared.

On May 11th, his second day in the hospital, I found him very restless, pulling about the bed-clothes and any other objects he could reach with the left hand. There was incontinence of urine; no movement of the bowels since entrance. The right eye was now turned upwards and outwards, the pupil of medium size. The left eye was turned upwards and outwards, the pupil smaller than the right. The important symptom, however, was the appearance of a marked right hemiplegia of the extremities, the right upper extremity being apparently totally paralyzed; the right lower extremity largely so. Sensation over the right extremities was much diminished. I advised immediate operation as soon as permission of friends could be obtained.

Operation performed by Dr. John C. Munro about 4.30 P. M. Patient had Cheyne-Stokes respiration, and was almost moribund. The cranium was trephined just in front of the left parietal eminence, and an immense clot was found underneath the dura. The opening was enlarged and the clot removed. It extended from the anterior lobe backwards over the occipital, the thickest portion being as usual over the vertex and just posterior to the motor region. After removal of the immense clot, which was an inch or more in thickness at the thickest part, the false membrane was plainly visible.

At the end of the operation the condition of the patient was greatly improved as regards respiration and pulse. On the following morning he again developed Cheyne-Stokes respiration, and he died something more than twenty-four hours after the operation.

Although in this case the operation was not successful in saving life, it materially improved the condition of the patient for the time; and had we possessed data sufficient to justify operation earlier, there was a fair prospect that the patient's life might have been saved.

The proper *treatment* for subdural hemorrhage of any considerable size is trephining and removal of the clot. The operation is comparatively simple, and the danger to the patient slight and not to be considered in comparison with the risk of allowing the clot to remain. It is probable that removal of the false membrane, so far as it can be reached, is always advisable.

I am not aware that this operation has been performed before in these cases, although I know that it has been proposed.

The Drug Trade in the United States.—According to the *Pharmaceutical Era*, there are 36,352 retail drug stores in the United States, the ratio of population to each being 1,199, taking the figures of the 1890 census as a basis. It is estimated that in all probability there are 50,000 registered pharmacists, assistants, etc., employed in these stores. It is also estimated that there are in the United States over 2,000 establishments, with a capital of more than $100,000,000 engaged in the manufacture of drugs and chemicals.

Clinical Department.

THREE CASES OF EXTRA-UTERINE PREGNANCY.

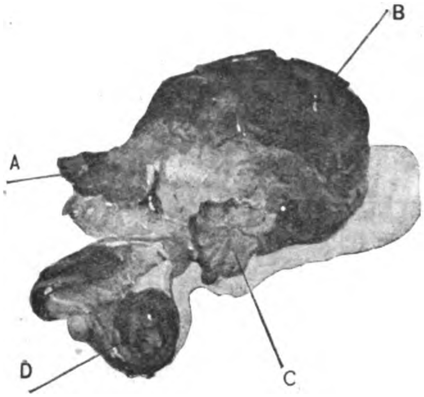
BY F. W. JOHNSON, M.D.,
Surgeon, Gynecological Department, St. Elizabeth's Hospital; Surgeon, Gynecological Department, Carney Hospital, etc.

THE first case is reported that others meeting with cases of extra-uterine pregnancy with rupture and hemorrhage may be encouraged to go ahead and operate, even though the chances for recovery seem small.

The large majority of cases of ectopic gestation with rupture and hemorrhage recover after operation.

Almost without exception the abdominal cavity is aseptic, and that leaves shock alone to be guarded against and met.

The diagnosis of rupture, even if there be hemorrhage, is by no means always easy; and this patient owes her life to Dr. E. S. Boland's diagnosis. Had he delayed in mind or body an hour or two, she would have been dead.



CASE I. FRESH SPECIMEN.
A, Uterine end. B, Ruptured sack. C, Fimbriated end. D, Corpus luteum in ovary.

CASE I. Mrs. L., aged twenty-six years, was operated on at the Carney Hospital October 4, 1894. She had been married five years, and had had one child — no abortions. She was confined two years ago (June, 1892). Labor was normal. Lochia was bloody for fifteen days, otherwise the puerperium was normal. Nursed her baby twenty-two months, and during that time was not unwell.

Menstruation began at fifteen. Regular every four weeks. Flows four days. Flowed profusely the first ten years of menstrual life; now saturates about eight napkins. Has always had dysmenorrhea. Backache, with bearing down, and pain in the lower part of the abdomen, begins the day before the flow, and lasts throughout menstruations. The pain is severest on the fourth day. Never any discomfort in the abdomen except during menstruation.

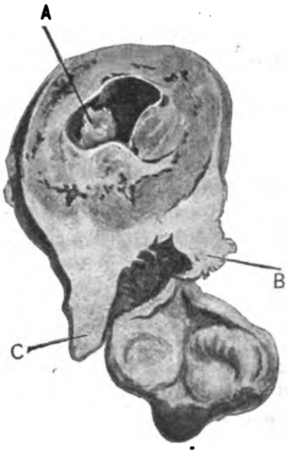
Weaned her baby April 4th and was taken unwell April 5th. Flowed four days. Flowed the usual amount. Had the usual dysmenorrhea. Did not menstruate again until June 15th. Flowed twelve days. At times profusely. Had a great deal of pain in the lower abdomen, especially severe in the right ovarian region. Between April 5th and June 15th had no pain in the abdomen, but felt tired and dragged.

Unwell again July 12th. Flowed four days. Had the usual amount of pain, and flowed the usual quantity. No intra-menstrual disturbance.

When menstruation should have begun in September there was no flowing, but there was severe pain in the lower abdomen. This pain was present up to the night when she entered the hospital. September 29th the flowing again begun, and continued in moderate amount until after the operation.

At 6.30 o'clock, October 4th, she was seized with severe pain in the lower abdomen. She screamed with the pain, and those living above her distinctly heard her cries. The feet and hands soon became cold. The lips became bloodless, and the body was bathed in cold perspiration. The pulse was 120, and the temperature was subnormal.

Dr. Boland saw her at this time and administered morphine and stimulants. A certain amount of reaction was established. The temperature went up to 99°, but the lips remained bloodless and the face and body blanched. As she laid inclining on her left side, there was dulness over the whole length of the left side of the abdomen. Peritonism was well marked. By vagina no bulging was detected. Thirst was present and the eyes were unusually bright.

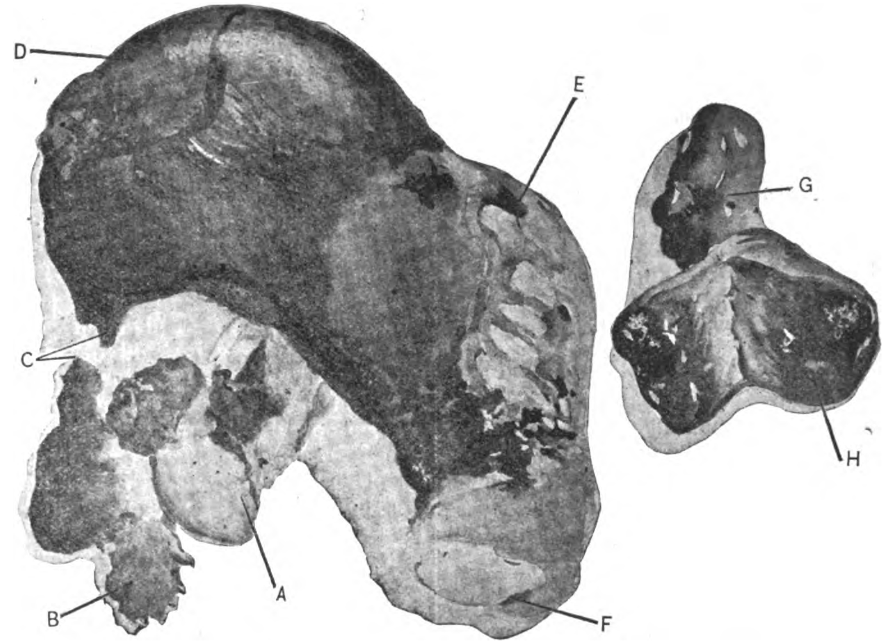


CASE I. AFTER SECTION.
A, Remains of embryo. B, Fimbriated end. C, Uterine end.

She decided to take the chance, and was carried to the hospital at once. Dr. Boland gave the ether. The pulse was 140 when the operation begun, and strychnia and brandy were needed before it was finished. Hot-water bottles were placed between the arms and chest, between the thighs and at the feet. The chest and lower extremities were wrapped in steaming hot blankets. No vessel bled while cutting through the abdominal walls. The peritoneal cavity contained a quart of blood. Some of it was old, some was fresh, part of it was clotted and part was fluid.

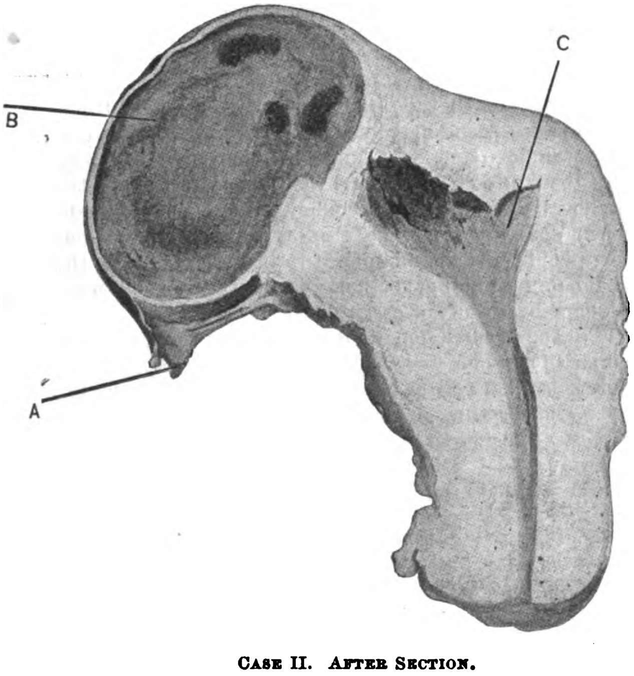
It took but a few minutes to tie off the mass on the right side from which the bleeding came. The left ovary was small and shrivelled and was not removed.

The patient's condition was so poor that only a few minutes were spent in washing out the abdominal cavity with a salt solution. No drainage. She was put into a heated bed, and transfusion was done. This was repeated the next morning. Her recovery was uneventful, except that the pulse stayed between 120 and 140 for four days. The incision healed by first intention.



Case II. Fresh Specimen.
A, Right ovary. B, Fimbriated end of right Fallopian tube — open. C, Cut ends of right Fallopian tube. D, Unruptured sack. E, Fundus uteri. F, Os uteri. G, Left Fallopian tube closed by adhesions. H, Corpus luteum in left ovary.

Dr. Whitney's report: "The specimen removed by you October 4th consisted of a portion of the tube and an ovary. About one inch from the fimbriated end was a dark-red, nodular swelling covered with clotted blood; this measured about one and one-half inches in diameter. On section there was found in the centre a cavity about half an inch long lined with a smooth membrane, and in which was the remains of a small embryo. In the ovary was a corpus luteum about three-quarters of an inch in diameter."



Case II. After Section.
A, Cut end of right Fallopian tube. B, Unruptured sack filled with blood-clot. C, Uterine cavity.

Case II. Extra-uterine pregnancy, with external migration of the ovum; hysterectomy.

B. S., married, entered the Carney Hospital December, 1893. Chief complaints: backache, sagging and dragging down, dysmenorrhea and general weakness.

Menstruation began at seventeen, regular. Flows two days. Soaks four napkins. Severe pain in both ovarian regions, beginning one day before the flow. Some leucorrhea for two years.

Has had two children. Last one born seven years ago. During the four years following had five abortions, all under three months. In the last, the secundines were removed manually.

Diagnosis: Chronic endometritis, retroflexion, left lateral laceration of the cervix.

December 21, 1893. Uterus curetted, and an Alexander-Adams' operation done.

January 10, 1894. Discharged, to return for trachelorrhaphy.

February 3, 1894. Operation on the cervix. Uterus in normal position.

February 16th. Discharged.

The following is the menstrual history since discharged, February 16, 1894.

March 20th. Did not flow much. No pain.

April. Flowed about as much as usual. No pain.

May, June and July. Nothing unusual.

August. Flowed a good deal. Flowed one week. Severe cramps.

September. Flow was rather scanty, and there was not so much pain.

October. Flowed two to three days. Very scanty flow. Not much pain.

November was similar to October.

December. Menstruation began at regular time. For a week the flow came in gushes; then constant flowing for three weeks. Severe cramps in lower abdomen, followed by fainting on two or three occasions.

January 30, 1895. Scanty flow for four days.

Re-entered the hospital February 13, 1895. On examination the uterus was found in the first degree of retroversion. Extending from the right horn was a mass which felt like a pus-tube. There was marked sensitiveness on pressure over and about this mass, and as there was evening rise of temperature the trouble was considered to be of inflammatory origin.

February 16th. Abdomen opened. The omentum was adherent to the right half of the fundus uteri and to the enlarged uterine end of the tube, which was the size of a hen's egg. The right horn of the uterus, the omentum attached to it, and the enlarged portion of the tube were much discolored and of a greenish-yellow hue showing the presence of beginning necrosis. The walls of the tube had given away on their upper aspect, and nothing except peritoneum separated the mass in the tube from the peritoneal cavity.

It being impossible to determine how deeply into the uterine tissue the necrosis extended, and fearing that in manipulation the contents of the tube might escape and infect the peritoneal cavity, I did a complete hysterectomy, closing the vagina and the peritoneal cavity. The convalescence was uneventful.

Dr. Whitney's report: "The specimen received from you February 16, 1895, consisted of the uterus and adnexa. The uterus was enlarged, the cavity slightly dilated and the mucosa thickened. In one tube, close to the uterus, was a spindle-shaped, dark-red dilatation, the size of a large egg, covered with blood-clot, which reached over into the uterus. Section showed this to be filled with clotted blood in which were branching cellular masses recalling villi of the chorion. No embryonic remains were found. The tube on the same side was open, but the ovary contained a few retention cysts. The opening of the Fallopian tube on the other side was entirely closed by fibrous adhesions. The ovary contained a well-marked corpus luteum, about one-half an inch in diameter. Tubal pregnancy, with external migration of the ovum."

CASE III. Extra-uterine pregnancy, with rupture; intra-peritoneal hemorrhage; laparotomy; labor at term one year afterwards.

M. B., aged thirty-two years, married nine years, was operated on at the Carney Hospital May 11, 1894. Good family and personal history.

Four children: oldest seven years, youngest fifteen months. No miscarriages. Menstruation always normal. The last child was born fifteen months previous to entering the hospital. The first menstrual period following this confinement was March 14, 1894. She flowed one day. On April 5th she had a slight show, and another on April 7th. On April 12th had a slight flow, with "terrible" pain in the right ovarian region. Since April 12th the pain in the right ovarian region has been quite constant, and at times severe.

May 11th. On opening the abdomen the pelvis was found filled with dark blood. The right tube contained a tumor the size of a lemon, which had ruptured. Intestines were adherent to the tumor. Right ovary and tube were removed. Left ovary and tube looked healthy, and were not removed. Abdominal cavity washed out with normal salt solution. Operation, from beginning to end, lasted one hour. Artificial respiration was needed once during the operation.

Twelve days after the operation she had an attack of pleuro-pneumonia on the right side. In every other particular her convalescence was normal.

Dr. P. J. Timmins, of South Boston, who sent Mrs. M. B. into the hospital, wrote me that he had delivered her, May 19, 1895, of "a large, healthy child. . . . There was no trouble before, during or after labor."

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BETTER THAN CANNON-BALLS FOR CONSTIPATION.

BY DOUGLAS GRAHAM, M.D., BOSTON.

WHEN people can go to a drug store and get medicine enough for twenty-five cents to keep their bowels moving for a week, it is not likely that they will care to undergo the bother and expense of having them started by means of massage until every other resource has failed.

Some years ago Dr. Sahli, of Berne, advised many of his patients suffering from torpid bowels to roll a five-pound cannon-ball over their abdomens for five or ten minutes every morning before rising, and in this way quite a number of them were cured of constipation. Therefore, when universal peace comes, the orator cannot only speak of turning swords into ploughshares, but also of cannon-balls into aperients; and peace will have its victories no less renowned than war.

A much more effectual, mechanical means for the relief of constipation than cannon-balls, and one which patients can also use for themselves, is, to percuss and pound their own abdomens for a few minutes morning and evening with the inner border of their fists. It is well to do this in the direction of the ascending transverse and descending colon. Alternating with percussion, friction and deep kneading may also be used. But these are less effectual and more tiresome to the patient than percussion. They are of more benefit when done by some one else, whereas there are but few people who would submit to being pounded on the abdomen by another without retaliating in some way, perhaps by a suit for assault and battery.

To show what a patient can do for himself with percussion when every other means had apparently failed, I will briefly narrate the following case: E. G., twenty-nine years of age; usual weight one hundred and fifty-six pounds. Both of his parents were highly neurotic. His general health had been but middling, and he had suffered from dyspepsia, at times to meats, at times to farinaceous substances, nearly all his life. When at his best his bowels were sluggish, moving but two or three times a week. For four years before I saw him he had been more dyspeptic and constipated than ever; and nine months before I advised him what to do he had had the grip, which locked his bowels more than ever. Six months later, as he was growing worse, he entered the hospital. Then his bowels had not moved for fifteen days and he was in great discomfort. Copious injections had no effect. Large doses of croton oil were given by the mouth, which caused the bowels to move. He was in the hospital ten weeks and had croton oil seven times which caused six dejections of small hard lumps accompanied with much pain. He was obliged to live on crackers and water, for his stomach would retain nothing else. When he left the hospital he was much reduced in weight and strength and was advised to report every few days, for the propriety of opening the abdomen was being seriously considered. About a fortnight after he left the hospital I met him and then he told me what I have just narrated. As he was an old friend of mine, I volunteered to show him what to do, by giving him a practical lesson in percussing, rubbing and kneading his abdomen. However, my private opinion was that it would not be of any use. Fancy my astonishment when he called on me seven weeks later looking like another man, and told me that he could walk twelve miles with ease, that his bowels had moved every other day regularly after he had percussed them for a week, and five weeks after commencing his pounding he was eating freely of generous mixed diet with no dyspepsia. He has since continued well. In the hospital he had vigorous massage of the abdomen for fifteen minutes every morning. It was probably *so vigorous* that it missed its aim by causing the muscles of the abdomen to contract so strongly that the impression did not reach the intestines at all.

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Medical Progress.

REPORT ON OTOLOGY.

BY CLARENCE J. BLAKE, M.D., BOSTON.

CATARRHAL AFFECTION OF THE EUSTACHIAN TUBES.[1]

Haug reports a case of a man, twenty-five years of age, who presented himself for treatment on account of simple catarrhal affection of the Eustachian tubes. Examination of the ears showed both drumheads to be transparent and so far depressed as to allow the visible portions of the tympanic cavity to be plainly seen. As the patient had neither acute nor subacute symptoms and the trouble seemed to be merely that of the Eustachian tubes, the Politzer air douche was used in the ordinary manner, but the inflation of the middle ears was immediately followed by severe pain and objective examination showed both drumheads to be dotted by punctiform ecchymoses, the left drumhead having in addition at several points small air bubbles, an emphysematous swelling also appearing over the left mastoid surface; all of these symptoms disappeared under massage. The explanation of the mechanism of the emphysema being that a rupture of the tympanic mucous membrane had permitted passage of air underneath it along the pneumatic cells of the mastoid and through a pervious dehiscence of the cortex.

INFLAMMATION OF THE EAR CAUSED BY A CARIOUS TOOTH.[2]

Haug also reports a case of a patient in whom after eight hours of pain in the superior posterior molar, there was a sudden sense of pressure in the corresponding ear accompanied by pain and decrease of hearing. Objective examination showed a hemorrhagic bulla of the size of a bean on the anterior inferior wall of the external canal, the drumhead slightly congested and the whole posterior inferior segment pressed outward and of a bluish-red color. The pain in the ear was not especially severe, the hearing distance for the voice in a whisper was decreased to one-half a metre, and the tuning-fork in the median line was heard by bone conduction better in the affected ear, the other ear being both objectively and subjectively normal. Examination of the teeth showed the left superior molar to be very carious, and, as was shown on examination by mirror, the cavity was filled by a dark-bluish hemorrhagic bulla. The lightest touch or even the blowing of air into the cavity of the tooth, caused severe pain. The treatment consisted in the extraction of the tooth and simple stopping of the ear with cotton. Nine days later the absorption of the exudation in the ear was in progress and on the sixteenth day the ear was entirely well. This case is of interest as there was conclusive evidence on the part of the patient that the ear had not been touched or injured in any way from without, and it is evident therefore, that a primary inflammatory process in the teeth can, under certain conditions, excite reflexly an acute irritation in the ear with consequent hemorrhagic exudation, simultaneously in the tympanic cavity and in the external auditory canal.

SEROUS MENINGITIS CAUSED BY CHRONIC DISEASE OF THE EAR.[3]

Upon the basis of a case which came under his own observation, Levi advances the statement that a serous meningitis may develop as a result of a chronic disease of the ear. The case in question was that of a man, thirty-five years of age, who simultaneously with the appearance of polypi during the course of a chronic suppurative inflammation of the right middle ear showed symptoms of meningeal irritation — headache, vertigo, loss of appetite, constipation, and an unsteady walk with a tendency to move toward the left, but no fever. Still later there appeared, with persistence of the headache and vertigo, but disappearance of the stiffness of the neck and difficulty in walking, the symptoms of a progressive increasing intracranial pressure, as shown by the irregular pulse (sometimes markedly prolonged), vomiting, hyperesthesia of different portions of the body, nystagmus and double dilatation of the pupils. The mastoid process, as well as the tympanic cavity, were thoroughly opened and cleared, but the patient died suddenly soon after operation. The autopsy showed caries of the middle and internal ears, passage of pus into the meatus auditorus internus through the opening in the wall between that canal and the cochlea, recent suppurative basilar meningitis and chronic hydrocephalus internus.

Ten additional cases are reported, taken from otological literature for purposes of comparison, one only of which died.

OPENING THE MASTOID.[4]

In 1889, the question of opening the mastoid by operation assumed a new prominence in the works of Küster and Bergmann, the former recommending a free opening of all the diseased parts in order to permit exit of pus.

Zaufal, following Küster's communication, went a step further, and removed the superior posterior portion of the canal in order to freely expose the epitympanic space, and in 1890 reported the results of his operation in twelve illustrative cases. In the same year Stacke published the account of his operation; the operations, both of Zaufal and of Stacke, being applicable, as a rule, to cases of chronic suppurative disease, and very rarely to the acute cases. Zaufal considers his procedure indicated in the following classes of cases: first, in all cases of chronic suppurative disease of the middle ear accompanied by swelling, tenderness, or the presence of pus on the outer surface of the mastoid, and in cases of fistula of the outer mastoid wall, or of the posterior bony wall of the external auditory canal, in cases of bony stenosis of the canal and facial paralysis; second, in cases with such cerebral symptoms as progressive hyperemia of the fundus, neuroretinitis, vertigo, vomiting, etc., and in those cases in which there has been either continuous or remitting fever of long duration, or septic fever, whether the mastoid process gives external symptoms of inflammation or not. And in these latter cases he recommends the most complete opening of the middle-ear cavity, as this is often only a preliminary operation in such cases to the opening of the cranial cavity for the purpose of evacuating extra-dural abscesses, exploring for cerebral abscesses, or for the opening of the sigmoid and transverse sinuses. In such cases, according to Zaufal, the operation of Stacke is a waste of time. He further commends his operation in cases of cholesteatom, for the removal of sequestra and foreign bodies in the antrum, especially when their presence is accompanied by alarming symptoms, and in cases of profuse offensive secretion, of actinomycosis and tuberculosis of the middle ear.

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[1] Emphyseme de la membrane du tympan et de la region mastoidienne, par Haug. Münch. med. Woch., October, 1894.

[2] Haug: Ueber Bildung Hamorrhagischen Exsudates in der Paukenholle und in ausseren Gehorgang in Folge einer Pulpitis eines oberen Molarzahnes. Vierte Versammlung der Deutschen Otologischen Gesselschaft zu Jena am 1 und 2 Juni, 1895.

[3] Levi: Ueber Meningitis serosa in Gefolge chronischer Ohreneatzündungen. Zeitschr. für Ohrenheilk, xxvi, 2, 3.

[4] Zaufal: Zur Geschichte und Technik der operativen Freilegung der Mittelohrraume. Arch. für Ohrenheilk, v, 37.

Zaufal's operation may be divided into the following periods: first, the opening of the field of operation; second, extirpation of the posterior superior lining of the osseous portion of the external auditory canal; third, opening of the mastoid antrum by chiselling through the mastoid and the removal of the whole of the posterior bony wall of the external auditory canal; fourth, removal of the superior posterior portion of the inner end of the osseous external auditory canal, which forms the outer and inferior wall of the epitympanic space; fifth, evacuation of the tympanic cavity; sixth, suturing and bandaging. The principal purpose of this operation is to bring about the formation of sound cicatricial tissue of the walls of the chronically inflamed tympanic cavity, a tissue which would be productive neither of pus nor of the exfoliative cholesteatomata. In the successful cases Zaufal has found the cavity thus formed to be lined eventually by a thin, dry, transparent membrane, or else filled by dry, firm bands of connective tissue. In regard to the formation of a permanent opening in the mastoid by skin transplantation, as is commonly recommended in cases of cholesteatom, Zaufal considers this unnecessary, the purpose of this safety opening being accomplished in his operation by the large opening of communication which is established between the middle ear and the external auditory canal.

INTRACRANIAL COMPLICATIONS OF OTITIC ORIGIN.[5]

Moos reports three additional cases of intracranial complications of otitic origin. The first, a man fifty-four years of age, had suffered from suppurative inflammation of the middle ear with discharge since childhood. Following a cold he had severe pain in the ear accompanied by swelling over the mastoid and the operation, which included not only evacuation of the mastoid but free opening of the antrum also, resulted in the removal of masses of caseous pus from the latter cavity. Notwithstanding the completeness of the operation, it was followed by prolonged vomiting, prostration and the general symptoms of pyosepticemia. The autopsy showed thrombosis of the transverse sinus.

The second case was that of a man thirty-seven years of age who had also suffered from a suppurative inflammation of the middle ear since childhood and who had a cholesteatom of the tympanic cavity and antrum, caries and facial paralysis, and who was seized suddenly with severe pain in the head and repeated chills. The autopsy in this case showed thrombosis of the sinus and also cerebral abscess.

The third case was that of a man thirty-five years of age who had suppurative disease of the middle ear following scarlet fever in childhood. Eight days before his death he was seized with severe pain in the right ear without other symptoms than insomnia and chills, which did not appear until the second day before death and he retained consciousness until the last hour. The autopsy showed a cerebral abscess as large as a pullet's egg on the right side and a cerebellar abscess on the opposite side.

OPERATION FOR RELIEF OF SUPPURATIVE DISCHARGE.[6]

Politzer reports a case of a woman, forty-six years of age, who had for several years, an occasional slight and not offensive, suppurative discharge from the left ear. Four weeks before admission to the hospital she had severe pain in and behind the ear, and for fourteen days before operation visible swelling at the tip of the mastoid. Examination showed the external auditory canal to be narrowed and filled with pus; there were soft granulations in the middle ear; the upper and middle portion of the mastoid surface was normal, but at the mastoid tip, there was a small abscess which had opened spontaneously. The radical operation was performed and in the tympanic cavity and epitympanic space yellowish-white, dry cholesteatomatous masses were found and the fistulous opening of the abscess in the mastoid was found to communicate directly with the inferior wall of the tympanic cavity. One week later transplantation was done according to Thiersch, the skin being taken from the left forearm. On the anterior and inferior wall of the opening the transplantation was successful; on the posterior wall the new skin sloughed away and the transplantation had to be repeated.

REMOVAL OF THE MALLEUS AND INCUS IN CHRONIC SUPPURATIVE DISEASE OF THE MIDDLE EAR.

Reinhard,[7] in a communication upon the subject of removal of the malleus and incus in cases of chronic suppurative disease of the middle ear, advocates this operation for the purpose of enlarging the opening through which pus from the fornix tympani must find its exit, and the means of cleansing and treating the walls of this cavity their entrance, and reports twenty-three cases of chronic suppuration of the fornix, without implication of the mastoid, in which he removed the malleus, and in sixteen the incus also, succeeding in finally healing fifteen out of the twenty-three cases, the fifteen cases classed as healed remaining under observation without recurrence of discharge for six months. In the majority of the fifteen cases cicatrization occurred in from one to three weeks, but where this was not the case, syringing with the antrum canula was resorted to with the speedy result of bringing about a cessation of the discharge. In one-half of the cases the hearing improved; in the others it remained the same as before the operation.

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[5] Archives of Otology, July, 1894.

[6] Adam Politzer: Demonstration einer Patientin, bei welcher die Radicaloperation der Freilegung der Mittelohrraume mit nachfolgender Thiersch'scher Transplanation ausgefuhrt wurde. Monatschrift für Ohrenheilk, June, 1895.

[7] Reinhard: Beitrag zur Hammer-Amboss-Excision. Archiv. für Ohrenheilk, xxxiii, vii.

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Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

TWENTIETH ANNUAL MEETING, BALTIMORE, MAY 28, 29 AND 30, 1895.

DR. MATTHEW D. MANN, of Buffalo, President.

DR. ASHBY of Baltimore, in a brief address, warmly welcomed the members to Baltimore.

A number of gentlemen from Baltimore and different parts of the country were present as invited guests. The time given for the reading of papers was twenty minutes, for the opening discussion ten minutes, five minutes for succeeding speakers.

THE RENAL CATHETER AND ITS USE IN THE DIAGNOSIS AND TREATMENT OF RENAL DISEASES.

DR. HOWARD A. KELLY, of Baltimore, read the first scientific paper.

The renal catheter was made long, fifty centimetres, and varied in diameter from one-half to three millimetres. The ureteroscope was introduced, the orifice of the ureter was brought into view, the catheter was introduced, the urine came out from the kidney in drops. For bacteriological purposes the urine was caught in a rubber sleeve. Five illustrative cases were recited. In one, during the treatment of the pelvis of the kidneys, small pieces of stone passed through the catheter from the kidney. In another case, being unable to sterilize a suppurative discharge from the pelvis of the kidney, he cut down, removed a stone, and subsequently the urine came away clear instead of being thick with pus. The renal catheter enabled one to locate exactly any constriction or obstruction in the ureter; to determine the functional value of the two kidneys; to diagnose and differentiate between hydronephrosis and pyelo-nephritis and pyelitis; to determine the nature of the infective process; to diagnose malignant disease; to carry out treatment, more especially disinfection.

DR. MUNDÉ, of New York, questioned whether the catheter could not be introduced into the ureter as well by touch as by the use of the ureteroscope, and mentioned a case in which it seemed Dr. Kelly had failed in New York.

DR. KELLY replied that a good light was essential, but with this, which he did not have in New York, one could always catheterize the ureter, and with greater safety than by touch. He had never seen any ill consequences follow catheterization of the ureter, further than some fever with chill, which disappeared.

Some remarks were also made by DRS. GORDON, SKENE, BACHE, EMMET, BALDY, McLAREN, and the President.

FURTHER EXPERIENCE AND OBSERVATIONS IN HYSTERECTOMY FOR FIBROIDS.

DR. S. C. GORDON, of Portland, Me., presented this paper as a supplement to the one which he had read on hysterectomy for uterine fibroids two years ago.

After quoting some paragraphs from this, he said that the more he performed complete hysterectomy for uterine fibroids the more satisfied he had been with the results. There were never any unpleasant after complications. However little of the cervix was left, as in Baer's operation, there was always more or less danger from septic material, nor did he close the vaginal opening completely after hysterectomy. He thus secured sufficient drainage without gauze, etc. He had had no deaths within a year, having performed hysterectomy during that time on about twenty cases. He believed in operating early, as soon as the patient had symptoms which caused her to consult the gynecologist. The operation was then safer, and the longer one waited the more likely was the case to be complicated by adhesions, malignant disease, etc. Dr. Gordon preferred the abdominal route. He had not changed his mind as to the advantage of continuous catgut suture in the pelvis in this operation. The continuous suture placed the blood-vessels fully under control; there was less liability, on account of the elasticity of the catgut, to strangulation of the tissues; there was no danger of subsequent fistula.

The discussion was postponed until Dr. Emmet had read his paper.

THE USE OF TRACTION AND MORCELLATION IN THE REMOVAL OF FIBROIDS *vs.* HYSTERECTOMY.

DR. THOMAS ADDIS EMMET, of New York, read this paper. He said the method to be described for treating fibroid growths of the uterus by traction and morcellation was one yet but little known to the profession, although he had practised it for many years. While the subject was limited to a special mode of treatment, he hoped the discussion would also be directed to determining the circumstances under which the uterus should be removed. He thought the method should reduce the number of total extirpations. We were yet in a transition stage, when the tendency was to run to one extreme or the other. He would no more accept the view that the uterus should be removed from the fact that a fibroid existed, than he would condemn the operation with the dictum that it should never be performed. To remove the uterus because of the existence of a fibrous growth, from which the patient may have suffered but little, was not, in his judgment, justifiable. To extirpate the organ before thoroughly exploring its canal, was equally reprehensible. Frequently a secondary growth projecting into the canal was the immediate cause of the loss of blood. The most important point of all, after locating a uterine tumor, was to determine the rapidity of its growth. He would exclude loss of blood as the least urgent symptom or need for removal of the uterus, since it was possible, with proper surroundings, to hold it in check for an indefinite period. It was but reasonable that this delay should take place whenever there was the slightest prospect of a good result. We need not discuss the death-rate of hysterectomy for fibroids, as this, doubtless, could be made more favorable, but the after-condition of the patient offered the chief objection to the operation under any circumstances but the most urgent. Some women were subsequently invalids because of sagging of the roof of the pelvis, or prolapse of the bladder, of the urethra, of the vagina; others for no known cause.

For years Dr. Emmet had been striving to define, if possible, the limit of necessity for hysterectomy, and had consequently been misrepresented as opposing it under all circumstances, which was an absurdity. As a result of his own observation and personal experience, the indication was only to save life. He had practised the method which he was about to describe for over thirty years, yet it was now coming back to us from abroad as an original method with a foreign endorsement and title, "Treatment by Morcellement."

Velpeau and Amassat were the first to enucleate, or by force tear these growths from their bed; Dr. Sims at an early period forcibly separated a fibroid with a stout steel instrument; and afterward Dr. Thomas introduced the serrated scoop. But by all these means damage was done to the surrounding uterine tissues, and a cavity was left which sloughed more or less. The procedure which Dr. Emmet originated was different, consisting in firmly seizing the growth with a large tenaculum or double hook, and by traction exciting sufficient uterine contraction to displace the mass and at the same time close the space which had been occupied. Great care was taken to do as little damage as possible to the tumor until it was evident that the uterus was contracting sufficiently to aid in displacing the mass and at the same time to obliterate the cavity. Section was made where necessary. The traction was begun as far off as possible, at the upper portion, so that in making the final separation it was done at the lowest part of the growth or that nearest the mouth of the uterus. The strong hook buried in the tumor should be twisted on itself so as to keep the point as much as possible toward the canal, away from the uterine wall; and in using the scissors the cutting should be toward the canal and finger inserted into the canal. Do not cut off a portion of the tumor until it begins to block the way; do not dig the tumor out of its bed. The traction should not be downward, dragging down the uterus, but twisting laterally in one direction and another.

Large fibroids were sometimes crowded outward and became subperitoneal because of smaller ones within, and sometimes removal of the latter was followed by the former becoming pedunculated and submucous. He believed fibroids had their origin near the canal where there was greatest functional activity, and that they were due to perverted nutrition, usually in women who had not had the natural stimulus of pregnancy. They often disappear with involution following pregnancy.

Dr. William M. Polk, of New York, opened the discussion on the papers of Drs. Gordon and Emmet. He said Dr. Emmet had limited his subject chiefly to submucous fibroids. In regard to tumors which could not be removed in that manner, Dr. Polk would take a stronger stand for hysterectomy than Dr. Emmet had seemed to do, for the excellent results usually obtained more than offset the occasional failures. As to the manner of operating, he thought we had neglected the infrapubic route much more than we should. Tumors, up to the size of a six months' fetus, could be removed by this method with safety and with better results than through the abdomen. He was sorry Dr. Emmet had not extended his method of morcellation to removal of the uterus as a whole when it contained fibroids, instead of limiting it to removal of the tumors alone. He supposed he would have done so had he not placed himself in opposition to removal of the entire diseased organ.

Dr. J. M. Baldy, of Philadelphia, said his experience upheld the views expressed by Dr. Gordon as to the necessity for extirpating the fibroid uterus. He cited cases in which neglect to operate early had ended disastrously.

Dr. P. F. Mundé, of New York, said he still stood on the ground which he had taken when Dr. Gordon read his paper two years ago, opposing removal of the uterus which contained a fibroid when no symptoms were present. He practised morcellation by the vagina frequently, and would never operate by the abdomen in such cases as Dr. Emmet had reported.

Dr. Howard A. Kelly said he agreed with Dr. Mundé, and disagreed absolutely with Dr. Gordon, for he had seen fibroids of the uterus disappear while the patient was under observation. Fibroids might be present from the size of a pea up, and certainly one should not remove the uterus when they caused no symptoms. He would operate where he could not relieve hemorrhage or pain or pressure symptoms, and where there was associated inflammatory diseases of the appendages.

Dr. R. S. Sutton, of Pittsburgh, made a distinction between myomatous tumors and fibromata, saying that no one had ever seen a hard fibroma disappear, while all had seen myomata, which were softer, disappear at the menopause or other period. Some specimens were shown in which he claimed no one could have avoided removing the uterus with the tumor.

Dr. McGonigal, of California, referring to Dr. Emmet's paper, said there were some fibroids which could be removed by enucleation, but he thought they had a natural tendency downward. There were others, intramural, which it was hardly possible to remove except by taking away the uterus. In others, subserous in character, enucleation could be performed through the abdomen, sparing the uterus and appendages.

Dr. A. P. Dudley, of New York, would advocate conservatism rather than the radical operation in all cases where the latter was not absolutely necessary. There were various methods of treating uterine fibroids, and one should apply them according to the case and his ability. He used catgut, as did Dr. Gordon.

Dr. A. J. C. Skene, of Brooklyn, gave an experience with Dr. Emmet's method, and said there were tumors which tended toward the uterine canal which could be treated in this way. There were others which tended in the opposite direction, and came legitimately under the surgeon's knife.

Dr. George J. Engelmann, of St. Louis, referring to Dr. Sutton's remarks, said he wished he possessed the ability always to make the distinction referred to between fibromata and myomata. He had seen many tumors disappear, some with treatment, some without, some striking symptoms relieved, especially by electricity. He agreed with Drs. Mundé and Kelly.

Dr. Montgomery, of Philadelphia, would not feel like taking the ground that the uterus which contained a fibroid should always be removed.

Dr. Howard, of Baltimore, related some successful experience with Dr. Emmet's method.

Dr. A. H. Buckmaster had observed Dr. Emmet's work, and was impressed by some points in the paper, especially as to the necessity for thorough exploration of the uterine cavity in order to arrive at an exact diagnosis. If this were not done, the uterus would often be removed where there was no necessity for it.

Dr. J. R. Goffe, of New York, said the age of the patient had not been mentioned in connection with hysterectomy. A small fibroid in a woman of thirty might demand removal of the uterus when it would not in one near the menopause.

In closing the discussion, **Dr. Gordon** read the last page of his paper, stating that he performed hysterectomy only in case the fibroid had caused the patient to seek the advise of the gynecologist.

Dr. Emmet said all had overlooked the important points in his paper except Dr. Buckmaster. The uterus was often removed to-day when dilatation and thorough exploration would show that the tumors could be gotten rid of otherwise and thus spare the patient the invalidism to which she was liable on losing her generative organs.

LIGATION OF THE PEDICLE WITH CATGUT.

Dr. Archibald MacLaren, of St. Paul, read a paper in which he described a method of preparing catgut, introduced by a St. Paul physician, and related cases to show that this material had been thoroughly sterilized and was perfectly safe. The sterilizing process consisted in exposure to a high temperature, 290°, while the catgut was wrapped in paper and put in a glass tube. It was free from the objection pertaining to other methods of heat sterilization, in that the catgut was not rendered brittle.

Dr. A. P. Dudley, of New York, spoke highly of catgut, which he used almost universally in the pelvis and elsewhere. It was obtained from a firm in New York who used the heat process of sterilization.

Dr. W. M. Polk, of New York, said he had lost two patients with catgut without apparent cause, when others treated in the same way, except that silk was used, recovered. The trouble with the catgut seemed not to have related to sepsis, because when tested it was found sterile.

The President, **Dr. Mann**, had used catgut pretty constantly for about twelve years, and he could not say that he had ever seen ill results directly due to this material. He thought Dr. Polk's deductions were hardly justifiable, since the catgut was found free from germs.

Dr. Howard A. Kelly expressed preference for silk, although he was able to sterilize catgut in cumol.

THE PRESENT TREATMENT OF UTERINE DISPLACEMENT.

Dr. Paul F. Mundé, of New York, in a paper on this subject, stated that he used supports in the treatment of posterior displacement much more frequently than in anterior displacement. His percentage of cures by such measures was still short of that given by Dr. Davenport, and did not exceed the figure given in his paper in 1881, five per cent. Anteflexion without prolapsus did not call for a pessary. When it was combined with prolapsus he used Gehrung's pessary.

Regarding operative procedures, Dr. Mundé first spoke of Alexander's method of shortening the round ligaments, which he performed before any other operator in this country, 1884. The total number of posterior displacements which he had so treated was 77, and he had been well pleased with the results. If the ligaments were not found, it was the fault of the operator. They might be weak, however, and break. Next to Alexander's operation, he preferred one of the methods of shortening the round ligaments within the abdomen. He would not, however, open the abdomen solely for the purpose of fixing the uterus anteriorly. The ideal operation for prolapsus had not yet been devised. If the woman had passed the menopause, he thought the recent method of the younger Freund would prove valuable, narrowing the vagina by circular stitches. Another recent advancement consisted in freeing adhesions through an incision in the posterior cul-de-sac, and then performing Alexander's operation.

EXPERIENCE WITH VENTRO-FIXATION AND ALEXANDER'S OPERATION.

Dr. A. Lapthorne Smith, of Montreal, read a paper giving a summary of his experience with ventro-fixation and Alexander's operation. During the past five years he had performed the two operations forty-nine times, Alexander's twenty-one, and ventro-fixation twenty-eight. Of course, this was only a small proportion of the cases of retroflexion which he had treated during the same period. The pessary had many objections, yet a few cases were cured after wearing it a few months. Plastic operations would not prevent prolapsus. Alexander's operation failed when the uterus and appendages were adherent, and this condition could not always be excluded before commencing treatment. Alexander's operation also had its risks; he had seen patients in whom it had been followed by hernia; he had known the ligaments to break, for naturally, having been out of use for months or years, they were weak, or in a state of fatty degeneration. In doing ventro-fixation one had the opportunity to examine the appendages, to break up adhesions, etc. It had been objected that it made a movable organ an immovable one. In answer he would say that he had found on opening the abdomen a year after the operation, that the attachment had been converted into a pedicle which permitted of free movement. Dr. Smith used two or three silkworm-gut sutures, and left them in a month.

ALEXANDER'S OPERATION.

Dr. Clement Cleveland, of New York, read this paper. He regarded Alexander's operation as one of the most beneficent ones ever devised; those who had been least satisfied with it belonging to the number who had had little experience. Bad results usually belonged only to first efforts, but it required considerable experience to become proficient in its performance. He thought it was the fault of the operator when the ligaments were not found. They were sometimes fragile and broke easily, but usually they had enough strength to hold up the uterus. He cautioned patients that it was best not to become pregnant for a year, yet he had never seen abortion or trouble arise from it. Dr. Cleveland had performed ventral fixation frequently, but preferred Alexander's. Make a short incision, draw the ligaments out sufficiently, usually about four inches, and in order to make their attachment quite firm, use their extremities as sutures, besides stitching them with silkworm gut at the pubes.

The discussion on the three papers was opened by **DR. DAVENPORT**, of Boston. Retroflexion of the uterus frequently was only temporary, and even when it had existed for years it failed often to cause symptoms until some complicating condition arose. Alexander's operation did not come into the discussion where there were adhesions. In simple retroversion he would prefer Alexander to ventro-fixation. The former, however, did not always relieve the symptoms. The frequency of hernia had been underestimated; it was apt to be followed by a feeling of numbness at the site of the scar. The cause of the displacement was not the weakness of the round ligaments, and these sometimes failed to hold the uterus in position owing to the abnormal condition of the cervix, of the utero-sacral ligaments, etc.

DR. ELY VAN DE WARKER, of Syracuse, referred to his paper of about twenty years ago, first describing the use of the intra-uterine stem, for which he then received very severe criticism. Time, however, had changed the minds of his critics. The instrument was of great value in certain cases.

The speaker thought Alexander's operation, with which he had personally had considerable experience, was not founded on scientific principles, and had proven unsatisfactory. Some pathological factor aside from the round ligaments had caused the retro-displacement and prolapsus, and this should receive one's attention.

DR. H. C. COE, of New York, thought Dr. Van De Warker spoke from false premises. The round ligaments were never intended to hold the uterus up as a dead weight. They were shortened simply to prevent it falling backward. There was no comparison between Alexander's and ventro-fixation, for the latter was to be undertaken only where the abdomen had, for some other reason, already been opened.

DR. THOMAS ADDIS EMMETT, of New York, had early been given opportunity to introduce the finger into the vagina and feel the lifting of the uterus when Alexander was performing his operation, and as a consequence of that experience had never done the operation. The trouble was due to the prolapsus, not the version; to straightening out and engorgement of the vessels; and what relief came from pessaries, etc., was due to overcoming prolapsus, not to overcoming retroversion.

DR. W. M. POLK, of New York, said Alexander's operation had been with us so long, and had been performed so many times that there could no longer be any question of its efficiency in relieving these cases. It could even be done where formerly it had been considered necessary to open the abdomen, for by first making an incision into the vaginal cul-de-sac the adhesions could be freed and the Alexander then performed.

DR. J. M. BALDY, of Philadelphia, spoke of the necessity for treating the uterus for inflammatory conditions, etc., and stated that in some cases of prolapsus hysterectomy was indicated.

DR. GEORGE M. EDEBOHLS, of New York, had had some additional experience with the operations described in his paper two years ago for the relief of uterine prolapsus, and stated that it had been quite satisfactory. It had been said that when the round ligaments were not found it was always the fault of the operator. He had himself once believed this, and doubtless it was usually true, but he had lately had two cases in which he had opened the abdomen on failing to find the round ligaments during Alexander's, and it was shown that they failed to proceed downward in the usual direction after reaching the internal ring, but passed outward.

(To be continued.)

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Recent Literature.

A Clinical Manual of Diseases of the Eye, including a Sketch of its Anatomy. By D. B. ST. JOHN ROOSA, M.D, LL.D. Pp. 621. New York: William Wood & Co.

If the title of this book had read, "A Panegyric upon the Ophthalmometer, with Incidental Remarks (more or less true) upon Ophthalmology," it would have more nearly expressed the real contents of the book. The teachings of this book are so one-sided and at variance with the experience and practice of the most careful ophthalmologists of the day, that it is with considerable difficulty that we know where to begin in writing a review. Perhaps the best course is to make a series of quotations from the book itself. "Retinoscopy is a method of very little importance where the ophthalmometer is properly employed and relied upon, whatever may be the case," p. 151.

"The patient will choose a cylindric glass under the examination made with a mydriatic, when without one he will not," and leads the reader to infer that an astigmatism of half a diopter thus obtained should not be corrected.

"In my judgment, we may, with propriety and with great advantage to accuracy, and consequent benefit to the patients, abandon all other methods for determining astigmatism, except in very rare cases and trust entirely to the ophthalmometer," p. 497.

"With a little practice with the ophthalmometer, retinoscopy also becomes of very little value. Loring never considered it of any importance," p. 513.

"I can hardly sufficiently condemn, as illogical and useless, the plan of using the ophthalmometer and then verifying its readings by the use of atropia and retinoscopy. Even the use of test-glasses in many cases may be dispensed with, if we have satisfied ourselves by a careful ophthalmoscopic examination that no lesion exists on the fundus, lens or vitreous, and the test-cards show $\frac{20}{20}$ or more to express the distant vision," p. 514.

"I think that uncorrected hyperopic astigmatism is the chief source of asthenopia. So important a factor is it that we need not in young persons, unless the axial refraction be highly hypermetropic, correct this at all, but be content with correcting the astigmatism for near work only. This is when the vision without glasses is $\frac{20}{20}$ or $\frac{20}{30}$. Just how much hypermetropia we may leave uncorrected I can hardly say, any more exactly than to indicate from two to three diopters as the limit," p. 518.

"When I became familiar with the use of the ophthalmometer in 1888, I once for all abandoned the idea of relieving muscular asthenopia except by correction of an error of refraction, and I advised, as I do now, that the term be given up as having no rightful place as generally used in ophthalmology. If the student will carefully correct the errors of refraction, he will have no need for tenotomies, except for strabismus, nor for prism, except for paresis or paralysis of the external muscles," p. 520.

"In all but exceptional cases, the correction of the astigmatism alone will, I believe, give the best results," p. 531.

"There is scarcely a muscle in the body that begins work at so early a period . . . as the ciliary muscle," p. 536.

After the reader has read through the above extracts, comment from the reviewer is hardly necessary, nevertheless, perhaps the restatement of some ophthalmological facts may serve to point a moral and adorn the tale:

(1) The ophthalmometer simply measures the curvatures of the anterior surface of the cornea.

(2) The posterior surface of the cornea is not measured by the ophthalmometer, neither is any abnormality of the lens or the curvature of the posterior surface of the eye.

(3) Retinoscopy measures the total error of all these factors, including that of the anterior surface of the cornea.

(4) The trial of eyes by test-lenses, when carefully done, gives a result which differs from that of the ophthalmometer in a majority of cases, owing to the above factors, all of which can be approximately estimated by retinoscopy.

(5) The cure of asthenopia by the correction of muscular errors is an everyday experience in the practice of a large proportion of the ophthalmologists of this country.

(6) The ciliary muscle at birth is almost rudimentary.

From all of which it will be seen that the happiest lot which could befall a practitioner in ophthalmology would be that all his competitors should be converted to Dr. Roosa's views.

Nor are all the astounding statements in this book confined to the chapters on refraction. Under the head of "Anesthetics in Operations," we find the following directions: "A solution of eight grains of cocaine to the ounce is sufficiently strong. It is used *from fifteen minutes to a half hour* before the operation, dropping it freely *on the cornea* every three to five minutes."

One can easily imagine, but not wish to witness, the mental state of the patient, and the physical condition of the eye, when the knife attempts to enter the anterior chamber in a cataract case after treatment for half an hour as described above.

The omissions are sometimes as startling as the statements quoted above; for instance, in the diagnosis of acute glaucoma severe symptoms are enumerated — increase of tension, ciliary congestion, etc., but the shallowness of the anterior chamber and the dilatation of the pupil are entirely omitted.

In the section on the removal of cataract by suction a very good cut of Dr. Robert Willard's suction instrument is inserted, but wrongfully attributed to Dr. H. Derby. The paragraph is concluded as follows: "I do not think it has many advantages over a good linear extraction, while it is rather difficult to perform"; neither of which statements would be agreed to by any surgeon who had used Dr. Willard's instrument in properly selected cases.

And finally there is bound into the book at the end fifty pages of advertisements, which is an infliction hard enough to bear in a monthly magazine but absolutely inexcusable in a scientific book that is already bulky and heavy.

A Text-Book of Practical Therapeutics. With especial reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.S.C., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Fifth edition, enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co. 1895.

This fifth edition of Professor Hare's book is a still further improvement on the lines which are characteristic of this well-known work. The material is so arranged as to be most readily accessible, and the information is clearly imparted. The work lacks the fulness of some of the other books on this subject; but it is eminently what its title asserts, "A Text-Book of Practical Therapeutics."

Twentieth Century Practice. An International Encyclopædia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In Twenty Volumes. Volume III: Occupation Diseases, Drug Habits, and Poisons. New York: William Wood & Company. 1895.

Under the general headings of Occupation Diseases, Drug Habits and Poisons, this third volume of the "Twentieth Century Practice" contains the following articles in the order given: "Alcoholism and Drug Habits," by Dr. Norman Kerr; "Shock and Collapse," by Dr. George F. Shrady; "Sea-Sickness," by Dr. A. L. Gihon; "Mountain Sickness," by Dr. Georg von Liebig; "Osteomalacia," by Dr. W. T. Councilman; "Heat-Stroke and Frost-Bite," by Dr. Gihon; "Diseases of Occupations," by Dr. James Hendrie Lloyd; "Poisoning," by Drs. Beaumont, Small, and James Stewart.

The authors are well-known men, the subjects are important, and the articles are in most instances useful contributions.

It is not easy to understand with reference to all of them on what principle they were selected and thus grouped together under the heading of the title-pages. The article on "Poisoning" is more brief and condensed than that on "Alcoholism and Drug Habits," and the article on "Diseases of Occupations," deals in places with the same questions as the article on "Poisoning."

These volumes have so far followed each other with a promptness which augurs well for the early completion of the work.

The Medical Association of the Hawaiian Islands. — The officers of this association, elected at the annual meeting in May last, are: Drs. John S. McGrew, President; Henry W. Howard, Vice-President; and Robert P. Myers, Secretary.

THE BOSTON

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PERMANGANATE OF POTASH AS AN ANTIDOTE FOR MORPHINE POISONING.

We have in a former number of the Journal alluded to the experiments of Dr. Moor, of New York, respecting the antidotal power of permanganate of potassium in poisoning by opium and especially morphine. Dr. Moor claims to have demonstrated upon animals and himself that as much as three or four grains of sulphate of morphine can be taken internally provided a similar or double number of grains of permanganate of potassium are also swallowed at the same time, or very soon after. Bokai had previously shown the antidotal efficacy of the permanganate administered internally in one-third of one-per-cent. solution in the treatment of phosphorus poisoning, phosphorus in presence of this oxidizing agent being converted into ortho-phosphoric acid, a harmless compound. Audeal still later studied the action of potassium permanganate in animals poisoned by strychnine, muscarine, colchicum, oil of savine, and oxalic acid. He claimed quite remarkable results, affirming that all those toxic substances were perfectly innocuous to animals which were at the same time treated with the permanganate. Rabbits dosed with oxalic acid were exempt from toxic effects if at the same time or immediately afterward they received the same amount of a one-half-per-cent. permanganate solution.

Subsequently some discredit was thrown on Dr. Moor's experiments by Dr. Andrews, of Montgomery, Ala., who called attention to the extraordinary tolerance of dogs to morphine, even in doses which would be ordinarily fatal to a man.

By far the most valuable contribution to the literature of the subject is by Dr. Leedom Sharp, in the October number of the *Therapeutic Gazette.*[1] The writer analyzes the experimental and clinical data, and finds evidence that permanganate exerts an influence that combats to some extent the effect of morphine. There are now on record some dozen clinical cases of morphine poisoning, where permanganate of potash entered into the treatment, either as the principal agent or as adjuvant. In some of these cases it was administered early, in others not till after the poison had been for some hours swallowed; it was given in some cases by mouth, in others subcutaneously. In most of the cases, the attending physicians found it difficult to assign the part in the recovery due to the permanganate, other remedial agents having been used. While there has been but one case reported that can be said to have recovered from the poisoning by the administration of the permanganate, there is scarcely one that might not have got well under persistent and judicious treatment, had the permanganate not been given. Dr. Sharp is, however, convinced that in a few of the cases there is evidence of a decided effect produced by the use of the drug. He is confirmed in this belief by the results of his experiments, which show not only that there was marked increase in the number of respirations, but an apparent effect on the circulation, and that in each case where morphine had been given the lives of the animals were materially prolonged beyond the time at which death occurred in the control experiments with morphine, when permanganate was given to counteract the poison.

There is, this writer says, no doubt that morphine is rendered largely inert by permanganate when the two are brought together in direct contact; it may be regarded as demonstrated that when permanganate of potash is taken immediately after the administration of a toxic dose of morphine, or when given together, the poisonous effects are destroyed. Dr. Sharp's experiments on rabbits, after he had first ascertained the toxic dose in these animals, seem quite conclusive in this regard.

In cases where both morphine and permanganate were introduced by the mouth, the effect was much more marked than when both were exhibited subcutaneously, even where the permanganate was injected as nearly as possible in the same place that the morphine was injected. It is interesting to note that shortly after the administration of the permanganate there was a marked rise in the number of respirations, which seemed to indicate a physiological action on the respiratory mechanism. The action of the permanganate in cases of poisoning by morphine is much more decisive than that of peroxide of hydrogen, or any other oxidizing agent (this is given as an inference from five carefully conducted experiments).

We cannot present even an epitome of all the experiments recorded in Dr. Sharp's monograph, and can only give the conclusions:

(1) The susceptibility of lower animals to the action of morphine renders experiments on them very unsatisfactory as aids to a correct estimate of the results in man.

(2) The dose of permanganate of potassium necessary to counteract the enormous lethal dose of morphine in the lower animals must, of itself, prove fatal.

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[1] Therapeutic Gazette, 1895, page 651.

(3) The exhibition of permanganate of potassium by the stomach or hypodermically has a marked influence in prolonging the life of rabbits poisoned by morphine.

(4) The action of permanganate of potassium, when given separately from and not immediately following the dose of morphine, is not chemical: (*a*) because there is no proof of a chemical action to be adduced from the cases or experiments; (*b*) because there is evidence that it does not act chemically.

(5) The action of permanganate of potassium is physiological: (*a*) because there is no proof that it acts chemically except when brought into direct contact with the morphine in the stomach; (*b*) because there is evidence that the permanganate, when given by the stomach or hypodermically, increases the number of respirations; (*c*) because there is evidence that the exhibition of the permanganate by the stomach or hypodermically has an appreciable effect on the circulatory system, as seen by the dilatation of the vessels of the ears and by the direct effect on the blood.

(6) Permanganate of potassium is not a reliable antidote: (*a*) because there is no proof that when it is administered after the absorption of the morphine it has any chemical action whatever on morphine in the system.

(7) Permanganate of potassium, like strychnia, atropine, and caffeine has some valuable properties useful in the treatment of morphine poisoning, but as yet undetermined.

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THE SIGNS OF DEATH.

A RECENT editorial on this subject in the *British Medical Journal* calls attention to certain letters to the daily papers, in which is expressed a belief in the possibility of the interment of living persons. A popular superstition, of which many medical men meet instances, is this, that some friend or relative may have been buried alive. "When the body was transferred from the receiving tomb to the grave, it was found to have turned on its side," or, "The face had such a natural expression at the funeral, do you think he could have been merely in a trance?" are instances of the questions asked of medical men with regard to such cases. The belief in the possibility or even frequency of such accidents is fostered by newspaper writers who dilate upon the possibility of the deceased having been in a trance, and upon the length of time during which such trance seizures may last, until a great deal of harassing and entirely unnecessary anxiety on the part of the public is conjured up. We quote from the above-mentioned journal the following answer to these trance arguments, etc.:

"The possibility of apparent death being mistaken for real death can only be admitted when the decision of the reality of death is left to ignorant persons. We are quite unprepared to admit the possibility of such a mistake occurring in this country to a medical practitioner armed with the methods for the recognition of death that modern science has placed at his disposal. Moreover, even by the ignorant, the reality of death can only be questioned during the period preceding putrefaction. During this period various signs of death appear which, taken collectively, allow of an absolute opinion as to the reality of death being given. To each of these, as a sign of death, exception may perhaps be individually taken, but a medical opinion is formed from a conjunction of these signs, and not from the presence of an individual one."

In catalepsy, trance, and profound sleep lasting for a long period, the heart's action is never entirely suspended, and its pulsations, though faint, may always be detected by careful stethoscopic examination. The respiration also never entirely ceases under these conditions.

When to the absence of respiration and circulation and the gradual cooling of the body, beginning at the extremities and extending toward the trunk, are added the gradual oncoming of rigor mortis, and the production of post-mortem ecchymoses, the diagnosis of death may be made with certainty.

The cadaveric rigidity is also easily distinguished by unmistakable characteristics from the rigidity due to tetanus, catalepsy, hysteria and the various other causes which produce it during life.

The change of position of a body in a coffin may be due to tilting or motion during lowering into the grave, or may be the result of gaseous distention during putrefaction. Supposing that a body has been screwed down in an air-tight coffin, it would be impossible for consciousness to be recovered, for the reason that any respiratory movements would produce speedy asphyxia. The feeble flame of life is not to be revived by the entire exclusion of air, and confinement within the narrow limits of a coffin.

If after twenty-four hours have elapsed from the time of supposed death, a competent medical authority on examination of the body pronounces that death has taken place, there can be no question of the fact.

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MEDICAL NOTES.

ANNUAL MORTALITY FROM SNAKE BITE IN INDIA. —The loss of human life from snakes and wild animals in India last year was one to every ten thousand of the population. From the same cause a hundred thousand head of cattle were lost.

VOMITING BY A NEW METHOD.— Dr. Charles L. Greene, of St. Paul, publishes in his local journal an interesting article entitled, "A Suggestion Bearing upon the Treatment of Persistent Vomiting by a New Method," a careful perusal of which fails to show any new method of vomiting other than that practised so effectually at sea. — *Maryland Medical Journal.*

THE TRI-STATE MEDICAL SOCIETY.—At the last meeting of the Tri-State Medical Society (of Iowa, Illinois and Missouri) the following officers were elected: President, Dr. Robt. H. Babcock, of Chicago; First Vice-President, Dr. A. H. Cordier, Kansas City; Second Vice-President, Dr. W. A. Todd, Chariton, Ia.; Treasurer, Dr. C. S. Chase, Waterloo, Ia.; Secretary, Dr. G. W. Cale, St. Louis. The next meeting will be held in Chicago the first Tuesday, Wednesday and Thursday, in April, 1896.

KAFFIR GOLD FOR THE LONDON HOSPITALS.— Mr. B. I. Barnato and several other friends have sent to the Lord Mayor of London, through Mr. H. C. Burdett, checks for £15,000, £1,000 of which is to go to the Hospital Sunday Fund, £600 to the Hospital Association for the establishment of a reference library on all subjects connected with hospitals and charities, and the remainder to other indicated charities.

MEDICAL SCHOOLS OF PHILADELPHIA.—The *Medical News* gives the following statistics as to the several medical schools of Philadelphia. The University of Pennsylvania has 900 students, as against 865 in 1894–95; Jefferson Medical College has 725, as against 700; the Medico-Chirurgical College has 350, as against 225; the Hahnemann Medical College has 285, as against 260; the Women's Medical College has 200, as against 175; and the Philadelphia Policlinic 150, as against 120. The total number of students in all the medical schools of Philadelphia this year is, therefore, 2,610, as against 2,345 in the previous session.

THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.—The annual meeting of this Society was held at Chicago, September 24, 25 and 26, 1895. The attendance of members was large. The following named were elected officers for the ensuing year: President, Dr. Joseph Price, of Philadelphia; Vice-Presidents, Drs. Albert Hawes Cordier, of Kansas City, and George Sherman Peck, of Youngstown, Ohio; Secretary, Dr. William Warren Potter, of Buffalo; Treasurer, Dr. Xavier Oswald Werder, of Pittsburgh; Executive Council, Drs. Charles A. L. Reed, of Cincinnati; James F. W. Ross, of Toronto; Albert Vander Veer, of Albany; Lewis S. McMurtry, of Louisville, and J. Henry Carstens, of Detroit. Seventeen new Fellows were also elected. The ninth annual meeting was appointed to be held in Richmond, Va., Tuesday, Wednesday and Thursday, September 15, 16 and 17, 1896.

PHYSICIANS AND POETRY.—The fact that Sir Edwin Arnold recently delivered the address at Sir Thomas's Hospital, on the occasion of the distribution of prizes to the students in the Medical School, recalls certain passages in the after-dinner address of Prof. Charles Eliot Norton before the Massachusetts Medical Society last June, on the importance of the cultivation of the imagination, and especially of poetry, to the busy medical man. His tribute to Sir John Simon, the distinguished surgeon to that same hospital, will be remembered. "I have known few men" he said, "who had a more thorough acquaintance with Shakespeare, with Milton, and with the other great masters of English literature than he." The students at that hospital, it seems, are fortunate in having such a reminder of the "never-failing source of comfort" which they may find in literature and poetry, as were the members of the Massachusetts Medical Society last June.

THE EFFECTS OF THE MODERN MILITARY RIFLE.—In our editorial of August 29, 1895, on this subject we published a partial abstract of Sir William McCormac's address before the British Medical Association, showing that these projectiles of small size and rapid velocity produced by no means such innocent and trifling wounds as the theories of certain writers would have us believe. On the contrary, their shattering effect upon the skull and long bones, both at long and short range was found to be extreme. A confirmation of this view has recently come to light in a report published in the *Journal of the American Medical Association* of October 19th, by Major Alfred C. Girard, Surgeon U. S. Army, of the case of a military convict who was shot through the head by a sentinel while attempting to escape from Fort Sheridan, Ill., with the Kräg Jorgensen rifle, which has lately been adopted by the U. S. Army. The shot was fired at a distance of ninety feet, and the man died within half an hour. At the autopsy the wound of entrance was found in the upper occipital region, and that of exit in the forehead. Extensive stellate fractures were produced at both points; the whole skull cap was shattered, with partial separation of the sagittal, coronal and lambdoid sutures. Such an instance effectually disposes of the so-called "humane" theory of the effect of these projectiles. The extensive fractures produced are believed to be due to the fact that the high velocity increases and extends the zone of lateral expansion, increasing the so-called "explosive" effect.

NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON.—During the week ending at noon, November 6, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 116, scarlet fever 17, measles 4, typhoid fever 27.

ANOTHER FATAL KNOCK-OUT BLOW.—During a boxing bout at the Casino Club at Natick last Saturday, a sharp blow under the left ear felled one of the contestants. In falling, his head struck the sharp edge of a table, cutting a gash. Whether the death was due to immediate severe cerebral hemorrhage, to the paralysis of the pneumogastric, or concussion, it seems more probable that the blow in the neck brought about the fatal issue than the striking of the forehead against the table. We refer to our editorial on this subject on November 22, 1894, and correspondence in the issues of November 29th and December 13th of the same year.

NEW YORK.

THE DEAF AND DUMB IN AMERICA.—The venerable Dr. Thomas Gallaudet has just returned from a three months' European trip, during which he read a paper at the congress of the British Deaf and Dumb Association on "The Higher Education of the Deaf-Mutes in the United States. As the result of his observations abroad he declares that Europe is far behind the United States in this field.

The New York Obstetrical Society. — At the annual meeting of the New York Obstetrical Society, held October 22d, the following officers were elected: President, Dr. Henry C. Coe; First Vice-President, Dr. J. Riddle Goffe; Second Vice-President, Dr. A. Palmer Dudley; Recording Secretary, Dr. Arthur M. Jacobus; Assistant Recording Secretary, Dr. George W. Jarian; Corresponding Secretary, Dr. Robert L. Dickinson; Treasurer, Dr. J. Lee Morrill; Pathologist, Dr. George C. Freeborn.

The Commissioners of Charities and Correction Criticised. — At the last meeting of the Medical Society of the County of New York, held October 28th, resolutions were adopted similar to those passed by the New York County Medical Association the week previous, protesting against the action of the Commissioners of Charities and Correction in summarily dismissing the attending and consulting physicians of the various hospitals under their charge. The principal resolution reads as follows: "*Resolved*, That we, the Medical Society of the County of New York, protest against this outrage upon the medical profession of the County of New York, and condemn the action of the Commissioners of Charities and Correction in delivering to these incorporated colleges three-fourths of the appointments upon the Consulting and Medical Boards of these hospitals, to whose support the profession at large as taxpayers contribute." In the preamble it is set forth that the three medical colleges (College of Physicians and Surgeons, Bellevue, and University Medical College), are incorporated institutions; that their faculties, with the Fourth Division of the Bellevue Hospital (which now shares with them the appointing power), are composed of less than one hundred physicians, while there are in the County of New York about three thousand physicians; and that these three thousand physicians are excluded from positions in the public hospitals except by courtesy of the colleges and the Fourth Division of Bellevue Hospital. After the adoption of the resolutions a motion was carried that the President should appoint a committee of five to present them to the Commissioners and also to the Mayor as soon as possible.

The Pauper Insane Again. — In making up its allotments for the year of 1896 the Board of Estimate and Apportionment has provided for the care of the pauper insane of the city for only three months from January 1st, as it is believed that within that period the Legislature will again pass an act transferring the insane to the care of the State. The board decided, however, that for these three months the weekly allowance for each insane person should be increased from $2.75 to $3.55, the sum allowed by the State.

A Fatal Jump. — Patrick Callahan, who had previously made a successful jump from the Brooklyn bridge, lost his life on October 27th, from injuries received in jumping from the highest point of the great railroad bridge at Poughkeepsie, a distance of 212 feet. It is said that death was really due to loss of blood, and that if his wounds had been promptly and properly dressed a fatal result would not have ensued.

Suicide of Dr. Carpenter. — Dr. James B. Carpenter, one of the most highly respected citizens of the town of Gouverneur, N. Y., committed suicide on October 28th, while suffering from temporary aberration of mind. For some time past he had been in poor health. Dr. Carpenter was born in Johnstown, N. Y., on July 9, 1819, and was graduated from the Castleton Medical College in 1847. During the late war he served as surgeon of the 39th Regiment, New York Volunteers, and in 1867 went to Gouverneur, where he had a large practice. About ten years ago he retired from practice, but continued to take an active interest in public affairs. In 1848 he married a sister of Governor Roswell P. Flower, and his wife died about fifteen years ago. He leaves one daughter, Mrs. Andrew Irving.

Death at the Age of One Hundred and Five Years. — On October 31st John Victory died in Brooklyn at the venerable age of one hundred and five years. Nine years ago, when ninety-six years old, he was run over by a brewery wagon, and in consequence had to have his leg amputated. Afterwards abscesses formed which necessitated a second and a third amputation. His recuperative power seems to have been extraordinary, and he remained in excellent health after this until a short time before his death. His final illness was of but three days' duration. Mr. Victory was born in County Cavan, Ireland, in May, 1790, and came to this country in 1830. He was the father of twelve children, six of whom — five sons and a daughter — are now living.

Opening of the Craig Colony for Epileptics. — The State Board of Charities has sent a circular letter to all the superintendents of the poor in the State informing them that the Craig Colony for Epileptics in Livingston County will soon be ready to receive a limited number of public patients to be apportioned among the various counties of the State.

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Miscellany.

THERAPEUTIC NOTES.

The Results of Antitoxin Treatment in Germany. — Heubner, of Berlin, has reported in the *Deutsche med. Wochenschrift* for October 17, 1895, the results in 117 cases of diphtheria treated by antitoxin since his previous report. His personal experience in the serum treatment now includes over 300 cases of diphtheria, and has extended over a period of two years. Of the 117 cases now reported for the first time, there were 12 deaths, a death-rate of 10.2 per cent. Since the end of May, 1894, 220 cases have been treated by antitoxin, with a mortality of 11.4 per cent. Of 174 uncomplicated cases there were 15 deaths, or 8.6 per cent. Of 46 complicated cases, 10 deaths, or 21.7 per cent. Heubner finds that the effects of the treatment of laryngeal cases, whether or not intubation or tracheotomy is necessary, are marvellously good, and that cases escape operation which before the days of the antitoxin treatment it would have been absolutely necessary to operate.

The question whether a fall of temperature is produced by the serum still remains a matter of doubt, although Heubner is inclined to think that the rapid fall of temperature by crisis which he has noted in many of his cases, takes the place of the slow descent by lysis which is so frequently observed in diphtheria.

In 84 cases of pure diphtheria, albuminuria was observed 23 times, or in 27 per cent.; six times the albuminuria was present before the injections were begun. The albuminuria in none of these cases assumed dangerous proportions. Exanthemata, sometimes attended by fever and pain in the joints, was observed in 19.6 per cent. of the cases.

Heubner states, that as far as his experience has extended, he has found no reason to change his opinion as to the harmlessness of the antitoxic serum. The danger which was formerly of gravest importance in diphtheria, and which was the chief cause of our anxiety, that of invasion of the larynx and trachea by the membrane, has been reduced by the antitoxin treatment to a matter of comparatively slight significance.

Correspondence.

THE STUDY OF DERMATOLOGY IN EUROPE.

Boston, October, 1895.

Mr. Editor: — I have thought that a sketch of my experience in the study of dermatology in the principal medical schools of Europe during the past two years might be of interest and advantage to other students.

It was by my father's advice that I went first to Paris, and so I will speak of my life there first.

The St. Louis Hospital, where instruction in skin diseases is chiefly given, is a very large, very old, and very interesting building. It was erected in 1610 as an asylum and means of isolation for the poor people stricken with the "plague," which was then raging so fiercely in Paris. There are three departments connected with this ancient edifice — one for dermatology, one for surgery, and one for obstetrics. For the diseases of the skin there are six hundred beds, a large new building for the out-patient service, a superb museum, an unsurpassed library, a post-mortem room, various laboratories, a large bathing establishment, and a room devoted to the uses of the Parisian Dermatological Society. These various divisions were under the control of six physicians — Messieurs Hallopeau, Quinquaud (who died during the winter), Tenneson, Du Castel, Thibièrge (who was substituting for Monsieur Besnier), and Professor Fournier. I must digress here a moment to express a deep regret that so many of the older school were absent either through death or indisposition. I refer to Hardy and Vidal, who had died during the previous three years, and to Besnier, who felt himself forced to relinquish his active service through enfeebled health. The loss of the privilege of seeing and hearing these Nestors of modern French dermatology was a keen one to me, but certainly no man should complain of the pupils of these older masters who are now in daily attendance at the St. Louis.

But to continue. Each of the six physicians has about one hundred beds in his wards, a laboratory for pathological, bacteriological and chemical research, and six or eight assistants under the charge of the *chef de clinique*, who is usually an older man and one whose appointment covers a period of eight years. There is only one service officially connected with the Faculté de Médecine de Paris, and this is under the leadership of Professor Fournier, who well deserves the distinction. Under Professor Fournier there is a still larger corps of assistants in charge of M. Louis Wickham, and, in addition, two comparatively young men who served as pathologist and bacteriologist respectively, men whose investigations have already brought their names into the highest prominence in the dermatology of to-day — I refer to Darier and Sabouraud. These three men — Wickham, Darier and Sabouraud — form a trio of assistants of whom any professor might well be proud. But now, unfortunately, Darier has lost this position through his appointment as *Médecin des Hôpitaux;* Wickham must go in two years; and Sabouraud cannot remain forever. Luckily, Darier has now, in 1895, a temporary position in replacing M. Besnier, but through the unfortunate system of Parisian hospitals he must soon be lost, perhaps forever, to the St. Louis, in order to fill some vacant post in any Parisian medical institution — whether it be one devoted to general work, to the insane, to the blind, or what not.

The best programme of work to be pursued at the St. Louis is hard to determine on account of the embarrassment of riches. Every day from nine until half-past eleven or twelve there is the out-patient department, which is absolutely unsurpassed in Europe in the richness of the quality and the quantity of the material. The number of patients presenting themselves daily varies from 250 to 400; among them are many rare diseases or many uncommon phases of the more usual ones. The celerity with which this vast throng of patients is seen is wonderful, but it is all explained by the admirable system and discipline maintained by the physicians and nurses. The chief allows his first and second assistants to prescribe for the patients, and each of these consulting doctors has an assistant at his elbow who writes the prescription and offers all explanations. The children are seen first, then the women, and finally the men — each patient coming before the physician with his affected area of skin bared so that all may see. The men all appear stripped to the waist. In these several ways, 200 to 400 people can be seen thoroughly enough between nine and twelve o'clock, and those whose cases need further study are assigned definite days and hours to reappear in the wards.

The out-patient department is presided over by one of the six physicians — each day being devoted to one man, who demonstrates to the small group of interested ones about him the noteworthy cases. Some of the men are exceedingly good talkers, and one learns much of the latest research, and is also impressed with the fact that the forefathers of the modern school were extraordinarily good observers and exceedingly advanced in their specialty. Another great advantage in these impromptu talks is that one hears the names and ideas of all foreigners quoted and respected, no matter what his country, and I firmly believe that, as a rule, the Parisian dermatologists honor foreign observers and are less self-satisfied than most of their European colleagues.

From the out-patients each physician chooses the new patients who are to fill his wards. From such a vast source to draw upon one can imagine what interesting and what severe cases occupy the beds of the St. Louis Hospital — of which I shall speak in a moment. From the out-patient consultation there are many who are requested to come again on a certain day in the week when their wants are administered to at greater length. The syphilis patients are assigned one day, the tricophytic adults and children another, those with lupus another, and those of doubtful or very difficult diagnosis another. Thus it is that there is so much to see on any given day in the week, when opportunity is offered the stranger to see more intimately the minutiæ of disease and treatment than is possible in the hurry of the out-patient consultation.

But let me explain. The syphilis patients are interrogated most carefully as to their family and personal history, and after the many interesting questions have been asked and answered their treatment is explained. With the tricophytic patients there is more to be done. From the new ones microscopic examinations of hairs from the beard or scalp are made, culture media are inoculated, and questions asked. With the old patients, epilations are begun or continued and the subsequent medicinal cures pursued. The sufferers from lupus are admitted in turn and the treatment by the scarifying knife or electric cautery administered, and the patients are sent back to their beds in the wards or else to their occupations with varying medicated plasters covering their superficial wounds. Many of the cases of lupus erythematosus and nævi are treated in the same way.

Of the interest and advantage of frequent visits to the wards one cannot say too much. Every morning about nine o'clock the daily visit of the physician-in-chief is made, and the visitor feels more than amply repaid for what he has seen of the patients and heard from the physician, who discusses the disease and its progress with his assistants. I shall never forget my first visit in Professor Fournier's wards under the guidance of M. Wickham. It seemed as if I were in a museum, for every bed contained some dermatological curiosity. Syphilis in all phases of severity and unusual appearance, keratosis follicularis, several cases of dermatitis multiformis, two of dermatitis exfoliativa universalis, most curiously modified cases of psoriasis and tinea tricophytina, together with the usual severe types of carcinoma, lupus, lupus erythematosus, eczema, et cetera. These are the cases which occur to my mind after a lapse of eighteen months. During the winter almost all the rarer skin diseases found their way into the six hundred beds of the hospital, but to mention them all would be to run through the index of a modern book on dermatology, and so I must content myself with a few of the more unusual examples which now remain especially impressed upon my mind: Mycosis fungoïdes, "glossite exfoliatrice marginé," leprosy, lymphoderma, acne necrotica, keratosis palmaris et plantaris from continued ingestion of arsenic, "bouton de Biskra," elephantiasis, "lichenification" in its varied aspects, ichthyosis, lichen scrofulosorum, Paget's disease, melanoderma lenticularis progressiva, molluscum contagiosum, morphea, pityriasis maculata et circinata, prurigo, psoriasis with subsequent loss of all nails, verruca plana, and "Vagabond's Disease."

As to the lectures of which a stranger can avail himself while at the St. Louis I must say a word. In addition to the extemporaneous talks by the bedside and over the out-patients, almost every one of the six physicians gives a course of two months' duration some time during the year; and lastly, there are the extremely interesting and instructive Tuesday clinical and Friday didactic lectures of Professor Fournier, whose immense experience in syphilis is concentrated into words and delivered to his hearers in the most beautiful, classic French. I have never listened to a more finished speaker, and no one could have spent an hour with him without carrying away some fact indelibly imprinted on one's mind.

The meetings of the Parisian Dermatological Society are held every month in the Salle des Conferences — a room especially devoted to the society in the same building as the library, museum and out-patient department. The walls are covered with interesting prints of the St. Louis Hospital in olden times and with photographs of the men who have added so much to the glory of French dermatology, while busts of the world's greatest dermatologists add still further interest to the lover of the history of this branch of medicine. The meetings are attended by all Parisian physicians interested in the skin, and are presided over by M. Besnier. Cases are presented and papers read, but to the stranger what gives so fair a promise is marred by the continuous noise of the men discussing among themselves a previous doubtful case. Thus no sound of the reader's voice can be heard by those in the back part of the room. With such men present and with such cases before one it is a great pity that such an opportunity should remain so unproductive and unsatisfactory.

And lastly, the student can turn his leisure moments — if there can be such at the St. Louis — to the wonderful museum of Baretta models. There is no other such place in the world. The superb life-like models now number over 1,900, in addition to the private collection of Professor Fournier, and what the student has failed to see in the other departments of the hospital can surely be found here as true to nature and almost as instructive as the disease in real life. A most complete catalogue by M. Feulard exists, while all the most interesting models have been subjects of monographs by their original observers. Thus can one spend hours and hours reading dermatology with the case before his eyes.

Thus far in this little description of the advantages of Parisian study I have devoted myself to morning work, but now when I come to the consideration of how the student is to occupy his afternoons, I am grieved to say that at last I must speak disparagingly of Paris from a dermatological point. Of course, a man should become acquainted with the histology and pathology and bacteriology of the skin and not confine himself in these later days to the clinical side alone. And here is where Paris is distressingly inadequate as a field of study to the stranger. In the winter of 1893 and 1894 no man in Paris gave any lectures upon the microscopy of the skin, and few, if any, spoke except in the most cursory manner of this important subdivision of dermatology. Now, in 1895, Darier is delivering an excellent course of lectures, but naturally lectures are only the starting-point, and one must work for himself with the microscope; but this opportunity under an instructor is still withheld to the stranger.

During my winter in Paris I had the privilege of working under Darier in Mallasez's laboratory at the Collège de France, and the histology of the skin was demonstrated to me by him in his clear, distinct and systematic manner.

In January, February and March by good luck I was fortunate enough to be enrolled as a member of the bacteriological course under M. Roux at the Pasteur Institute. I can imagine no more thoroughly scientific course in any branch of learning than this, as given by the modest man who has now become so deservedly world-renowned through his wonderful success in the treatment of croup and diphtheria. Every day at half-past one the small class assembles and listens for an hour or more to the clear, methodical, all-comprehensive words of M. Roux. Very often other men, as Metchnikoff, speak upon subjects of which they have made particular study and research. The lectures are descriptive and illustrative of the technique, all the best practical methods are explained and demonstrated for the study of the germ of each disease, and the life history of the different bacteria with their future results in the animal body is beautifully told. The richness of the apparatus is wonderful. After the lecture each student repeats at his own desk what he has seen demonstrated by the lecturer, and an able corps of assistants is on hand to help him in the intricacies of modern bacteriology. One great advantage in the Pasteur course is its thoroughness. The student must do everything for himself. He must prepare his own culture media and later inoculate them; he must inoculate animals and perform autopsies; he must prepare his material and stain and mount his slides. Of course, all necessary help and advice are given, but the aim of the Roux system is to make the student do things for himself and to do them thoroughly and scientifically.

This course must naturally be elementary, owing to its brevity, but every disease is lectured upon with the utmost thoroughness and nothing is treated cursorily or carelessly. The special lectures on hydrophobia and diphtheria were pre-eminently remarkable in this perfect course for novices in bacteriology.

Such was my work in Paris in the winter of 1893–94, and I shall always remember it with the greatest pleasure and delight; and now, after my travels elsewhere in Europe, I look back upon the St. Louis and the Pasteur Institute as the places of all others where one can find at their very best modern dermatology and modern bacteriology.

Charles J. White, M.D.

(To be continued.)

METEOROLOGICAL RECORD,

For the week ending October 26th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:–

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..20	29.90	44	50	39	58	56	57	N.W.	W.	16	6	C.	C.	
M..21	30.08	41	48	34	72	60	66	W.	N.W.	6	8	O.	C.	
T . 22	30.17	46	57	34	52	74	63	S.W.	S.	4	11	C.	C.	
W..23	30.07	53	59	47	75	58	66	W.	N.W.	11	9	F.	C.	
T ..24	30.16	43	52	34	67	59	63	W.	S.W.	9	7	C.	C.	
F ..25	29.84	52	61	42	69	56	62	S.W.	N.W.	16	14	O.	C.	
S...26	30.03	42	50	33	68	70	69	N.W.	S.	8	6	O.	C.	
☞	30.03		54	38			64							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 26, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,892,332	697	249	11.66	16.52	2.66	1.26	3.92
Chicago . . .	1,678,967	454	199	25.74	14.74	8.14	3.52	12.10
Philadelphia .	1,164,000	362	103	14.56	12.04	3.36	2.24	7.84
Brooklyn . .	1,100,000	398	146	17.00	16.50	3.50	—	9.25
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	491,205	220	82	17.55	13.95	6.65	2.25	7.50
Baltimore . .	496,315	204	71	12.25	10.29	3.60	4.41	1.47
Cincinnati . .	336,000	—	—	—	—	—	—	—
Cleveland . .	314,537	103	36	27.16	4.85	2.91	7.76	15.52
Washington .	275,500	118	39	19.55	13.60	4.25	8.50	1.70
Pittsburg . .	238,617	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	43	13	13.98	2.33	2.33	—	6.99
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	21	9	23.80	—	4.76	4.76	4.76
Fall River . .	88,020	34	15	20.58	11.76	11.70	—	5.88
Lowell . . .	84,359	26	11	19.25	11.55	7.70	3.85	7.70
Cambridge . .	81,519	21	9	14.28	4.76	—	—	14.28
Lynn	62,355	21	7	19.04	14.28	—	4.76	4.76
New Bedford .	55,254	12	3	8.33	8.33	—	—	8.33
Springfield . .	51,534	14	6	28.56	21.42	7.14	—	14.28
Lawrence . .	52,153	17	12	11.76	11.76	11.76	—	—
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	13	—	6.97	6.97	6.97	—	—
Brockton . .	33,157	7	3	14.28	14.28	—	—	14.28
Haverhill . .	30,185	6	1	16.66	—	—	—	—
Malden . . .	29,706	10	2	10.00	—	10.00	—	—
Chelsea . . .	31,295	8	4	25.00	12.50	—	—	25.00
Fitchburg . .	26,394	12	2	—	—	—	—	—
Newton . . .	27,122	5	4	—	60.00	—	—	—
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	10	2	—	—	—	—	—
Waltham . .	20,877	10	2	20.00	20.00	—	10.00	—
Quincy . . .	20,712	5	1	—	—	—	—	—
Pittsfield . .	20,447	4	0	—	25.00	—	—	—
Everett . . .	18,578	3	1	—	—	—	—	—
Northampton .	16,738	—	—	—	—	—	—	—
Newburyport .	14,554	7	1	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,960; under five years of age 1,053; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 498, acute lung diseases 408, consumption 325, diphtheria and croup 208, diarrheal diseases 130, typhoid fever 76, whooping-cough and malarial fever 20 each, scarlet fever and cerebro-spinal meningitis 14 each, measles 9, erysipelas 6, small-pox 1.

From whooping-cough New York 9, Brooklyn 4, Chicago 3, Philadelphia, Baltimore, Salem and Waltham 1 each. From malarial fever Washington 6, Baltimore 4, New York and Brooklyn 3 each, Nashville 2, Philadelphia and Haverhill 1 each. From scarlet fever Brooklyn and Boston 3 each, New York and Providence 2 each, Philadelphia, Cleveland, Lynn and North Adams 1 each. From cerebro-spinal meningitis New York 6, Chicago 3, Worcester 2, Lynn, Somerville and Clinton 1 each. From measles New York 7, Brooklyn 2. From erysipelas Chicago 3, Philadelphia, Brooklyn and Springfield 1 each. From small-pox New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending October 19th, the death-rate was 19.1. Deaths reported 3,873; acute diseases of the respiratory organs (London) 215, diarrhea 333, diphtheria 107, measles 83, fever 60, scarlet fever 47, whooping-cough 39, small-pox (London) 1.

The death-rates ranged from 31.5 in Blackburn to 10.4 in Derby; Brighton 15.3, Croydon 13.6, Halifax 17.2, Hull 22.9, Leeds 17.0, Leicester 16.4, Liverpool 24.0, London 18.0, Manchester 24.3, Newcastle-on-Tyne 20.7, Nottingham 13.1, Portsmouth 17.9, Sheffield 17.3, West Ham 17.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 26, 1895, TO NOVEMBER 1, 1895.

FIRST-LIEUT. MERRITTE W. IRELAND, assistant surgeon, to proceed from Fort Stanton, New Mexico, upon the abandonment of that post, to Benicia Barracks, California, and report for duty at that station.

CAPTAIN WILLIAM B. BANISTER, assistant surgeon, granted leave of absence for one month, to take effect on or about November 10, 1895, with permission to apply for an extension of one month.

Leave of absence for one month, with permission to apply for an extension of two months, is granted **FIRST-LIEUT. JAMES M. KENNEDY**, assistant surgeon, Camp Merritt, Montana.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 2, 1895.

M. H. **CRAWFORD**, surgeon, and J. E. **PAGE**, passed assistant surgeon, to the U. S. S. "Boston."

E. P. **STONE**, passed assistant surgeon, and G. P. **BRADLEY**, surgeon, to hold themselves in readiness for service on the "Indiana."

F. J. B. **CORDEIRO**, passed assistant surgeon, to the U. S. Training-ship "Constellation."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SIXTEEN DAYS ENDING OCTOBER 31, 1895.

PURVIANCE, GEORGE, surgeon. Granted leave of absence for twenty-five days. October 23, 1895.

HUTTON, W. H. H., surgeon. Granted leave of absence for twenty days. October 19, 1895.

GUITERAS, G. M., passed assistant surgeon. Granted leave of absence for thirty days. October 18, 1895.

YOUNG, G. B., passed assistant surgeon. Relieved from duty in laboratory of Bureau and directed to rejoin his station at Key West, Fla.

SPRAGUE, E. K., assistant surgeon. To proceed from Key West, Fla , to Key West Quarantine Station, for temporary duty. October 16, 1895.

PROCHAZKA, EMIL, assistant surgeon. To proceed from Cairo, Ill., to Detroit, Mich., for duty. October 31, 1895.

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EVENING LECTURES.

The next lecture will be given on Thursday, November 14th, at 8 P. M., by **PROFESSOR CHEEVER**. Subject: "Abscess." The profession are invited.

RECENT DEATHS.

BENJAMIN FANEUIL DUNKIN ADAMS, M.D., M.M.S.S. (formerly of Waltham), died at Colorado Springs, Col., October 28, 1895, aged fifty-six years.

DYER BALL NELSON FISH, M.D., M.M.S.S., died at Amherst, October 28, 1895, aged fifty-seven years.

BOOKS AND PAMPHLETS RECEIVED.

The Etiology of Rickets. By Samuel H. Friend, M.D., Milwaukee, Wis. Reprint. 1895.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum.............................. 2
Anheuser-Busch Brewing Association........ 3
Antikamnia Chemical Company...Antikamnia 30
Armour & Co.............The Armour Laboratory 14
Ayer's Hygienic Coffee.............................. 8
Baker, L. W., M.D.... ....Riverview 19
Baker, Dr. W. H..................................Card 19
Battle & Co.............................Bromidia 24
Bellevue Hosp. Med. Col..... Sessions of '94-95 16
B. H. R. Distilling Co.............................. 25
Borine Chemical Co..............................18, 23
Bowdoin College............Medical Department 16
Bowker, Dr. E. M........... ......Vaccine Virus 22
Boylston Medical Prize Questions............ 2
Breitenbach Co., M. J..........Pepto-Mangan 4
Channing, Dr. Walter.............................. 19
Chauncy Hall School.............................. 31
Cooke, Dr. James R................................ 19
Codman & Shurtleff......Surgical Instruments 10
Coll. of Physicians and Surgeons, Boston... 16
Coll. Physicians and Surgeons, Baltimore, 16
Crittenton, C. N......................Vinolia Soap 22
Cutter, Dr. W. P 19
Dadirrian, Dr..................................Matzoon 18
Dartmouth College, N. H....Med. Department 16
Drevet Co....................................Hydrozone 15
Edes, Dr. R. T.................................... 19
Fairchild Bros. & Foster............Panopepton 7
Feeble-Minded Youth, Inst. for..Barre, Mass. 13
Fehr, Dr. J.........................Baby Powder, etc. 10
Fellows, James I ....Hypophosphites 21
Fisk & Arnold......................Artificial Limbs 19
Flood, Dr. Everett.................................. 19
Fougera, E. & Co..................Imp'g Pharmacists 8, 28
Gear, J. Frank..............Surgical Instruments 5
Goldthwaite, Dr. S. V.............................. 19
Goode, T. F.....................Buffalo Lithia Water 13
Gould's Medical Dictionary................ 26
Graham, Dr. Douglas......Treatise on Massage 26
Greene, Dr. E. M........Examinations of Sputa 19
Harvard University........Dental Department 16
Harvard University.......Medical Department 32
Improved Movement Cure Institute......... 22
Leedom, Charles................Nuclein Solution 5
Lehn & Fink..............................Mfg. Chemists 27
Lloyd, Andrew J. & Co. .....Manufg. Opticians 2
Long Island College Hospital.................. 16
Mackie, Dr. L. V. G. .... Sanitarium 19
Maltine Mfg. Co.............................. Maltine 11
Mariani & Co..............................Vin Mariani 11
Marks, A. A.........................Artificial Limbs 20
Martin, Dr. F. C......................Vaccine Virus 3
McElroy, P. J.........................Glass Syringes 2
Medico-Chirurgical College 16
Norton, Dr. Eben C........ ....Card 19
N. Y. Pharmaceutical Co.......................... 4
N. Y. Polyclinic and Hospital.................. 16
N. Y. Post-Graduate School and Hospital.. 17
Oakland Chemical Co.......Hydrogen Dioxide 5
Parke, Davis & Co....Pharmaceutical Chemists 1
Patch, E. L. Co............... .....Lithia Tablets 12
Peake & Buzzell...........Surgeons' Supplies 23
Pinaud, Ed............................Sels Romains 23
Polk, R. L. & Co........Med. and Surg. Register 29
Practice For Sale.................................... 2
Purdue Frederick Co., The...................... 17
Reed & Carnrick..........................Peptenzyme 20
Ring, Dr. Allan Mott.........Nervous Diseases 19
Russell, Dr. F. W.......................................Card 19
Schieffelin & Co.....................Mfg. Chemists 14
Schulze-Berge & Koechl.......Migranin, etc. 3, 31
Seeley, I. B. & Co.......... .Hard Rubber Trusses 12
Sharp & Dohme.......................Mfg. Chemists 6
Stedman, Dr. Henry R..........................Card 19
Stillings, Dr. L. C. ....Card 19
Tanner, E. S................................Publisher 31
Thayer, Henry & Co................................ 6
Theodore Metcalf Co.............................Coca 9
Twitchell, Dr. George B.................... Card 19
Tyree, J. S. ....Antiseptic Powder 12
Umpleby, J. T............................Photography 2
University of Vermont,............................ 17
Walnut Lodge Hospital............................ 19
Waterman, Dr. Thomas..Animal Vaccine Virus 2
Weeks & Potter Co. ....Quinona 29
Wheeler, Dr. T. B........................Phosphates 12
White, Dr. Walter H..........................Card 19
Willard, Dr. A. J...............................Card 19
Woman's Medical College, Baltimore....... 16
Woman's Med. Coll. of the New York Infirmary 16
Woodward, L. F. ....Stammering 19
Yale University...........Medical Department 16

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† 5. Elementary Human Embryology	Dr. Minot	Medical School	Special*	25.
† 6. Advanced Embryology	Dr. Minot	Medical School	Oct.—May	75-125
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†11. Pathology of the Infectious Diseases.	Dr. Wright	Medical School	Nov., Dec.	25.
†12. Pathological Anatomy and Histology of the Nervous System	Dr. Taylor	Medical School	Special*	15.
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†14. Clinical Medicine	Dr. Knight	Boston City Hospital	Oct., Nov.	10.
†15. Clinical Medicine	Dr. Mason	Boston City Hospital	Nov., Dec., Jan.	20.
‡16. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Oct.	20.
‡17. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Dec.	20.
‡18. Abdominal Surgery	Dr. Conant	St. Elizabeth's Hospital	Oct., Nov.	25.
19. Clinical, Operative, Genito-urinary, Pathological and Minor Surgery	Drs. Monks and Thorndike	Boston City Hospital	Oct.—Dec.	25.
20. Clinical, Operative, and Minor Surgery	Drs. Burrell, Lovett, and Munro	Boston City Hospital	Dec.—Apr.	25.
21. Operative Surgery	Dr. C. B. Porter	Medical School	Special*	25.
22. Clinical Surgery	Dr. M. H. Richardson	Massachusetts General Hospital	Feb., March, Apr., May	25.
‡23. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Oct., Nov., Dec.	25.
‡24. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Apr., May, June	25.
25. Minor Surgery	Dr. Scudder	Massachusetts General Hospital	Feb., ‡Apr., ‡May	25.
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27. Clinical Surgery	Dr. Homans	Massachusetts General Hospital	March, Apr.	20.
†28. Orthopedic Surgery	Dr. Bradford	Children's Hospital	Apr.	15.
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30. Clinical Obstetrics	Dr. C. M. Green	Boston Lying-in Hospital	Jan., Feb., March	20.
31. Practical Obstetrics	Dr. Reynolds, Townsend, and Haven	Boston Lying-in Hospital	Special*	20.
32. Operative Obstetrics	Dr. C. M. Green	Medical School	Special*	25.
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35. Otology	Dr. Bryant	Infirmary	Dec., Jan	25.
†36. Ophthalmology	Dr. Standish	Infirmary	Dec., Jan.	Special.*
†37. Ophthalmology	Dr. Cheney	Massachusetts General Hospital	March, Apr.	Special.*
38. Gynecology	Dr. Swift	Free Hospital for Women	Oct.	25.
39. Gynecology	Dr. Swift	Free Hospital for Women	Dec.	25.
40. Gynecology	Dr. Davenport	Free Hospital for Women	Jan.	25.
41. Gynecology	Dr. Davenport	Free Hospital for Women	March	25.
42. Gynecology	Dr. Haven	Boston Dispensary	Nov.	25.
43. Gynecology	Dr. Swift	Boston Dispensary	Jan., Feb.	25.
44. Gynecology	Dr. C. M. Green	Boston City Hospital	Oct., Nov., Dec.	25.
45. Operative Gynecology	Dr. Davenport	Medical School	Special*	25.
46. Diseases of the Nose and Throat	Dr. De Blois	Boston City Hospital	Feb., March	Special.*
‡47. Diseases of the Nose and Throat	Dr. Farlow	Boston Dispensary	Oct.—Jan.	Special.*
‡48. Diseases of the Nose and Throat	Dr. Farlow	Boston City Hospital	Apr., May.	Special.*
‡49. Diseases of the Nose and Throat	Dr. Coolidge	Massachusetts General Hospital	Feb., March	Special.*
†50. Mental Diseases	Dr. Cowles	McLean Hospital	Special*	10.
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†52. Diseases of Children	Dr. Wentworth	Children's Hospital	Oct., Nov.	20.
†53. Diseases of Children	Dr. Wentworth	Children's Hospital	Dec., Jan.	20.
†54. Diseases of Children	Dr. Buckingham	Children's Hospital	Feb., March	20.
†55. Diseases of Children	Dr. Buckingham	Children's Hospital	Apr., May	20.
†56. Neurology	Dr. Knapp	Boston City Hospital	Feb., March	20.
†57. Neurology	Dr. Knapp	Boston City Hospital	Apr., May	20.
58. Neurology	Dr. Walton	Massachusetts General Hospital	Nov.	20.
59. Legal Medicine	Dr. Draper	Boston City Hospital	Oct.—June	25.
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PAGE

ORIGINAL ARTICLES.

THE LEGISLATIVE PROVISIONS FOR INSANE CRIMINALS IN MASSACHUSETTS. *By Arthur H. Harrington, M.D.*, Medical Director of the State Asylum for Insane Criminals, Bridgewater, Mass 481

A STUDY OF GUNSHOT WOUNDS WITH REFERENCE TO THE PROXIMITY OF THE WEAPON AT THE TIME OF FIRING. *By J. N. Hall, M.D.*, Denver, Col., Professor of Therapeutics and Clinical Medicine, University of Colorado 484

CLINICAL DEPARTMENT.

CLINICAL EXPERIENCE IN ABDOMINAL SURGERY AT THE MASSACHUSETTS GENERAL HOSPITAL. *By J. Collins Warren, M.D* 488

SARCOMA OF THE CHOROID. *By W. A. Parker, M.D.*, Springfield, Mass 491

MEDICAL PROGRESS.

RECENT PROGRESS IN ANATOMY. *By Thomas Dwight, M.D* 492

The Vermiform Appendix.—A Peculiar Cecum and Appendix, with Remarks on Peritoneal Pouches. — The Form and Relations of the Spleen and Kidneys.— Os Intermedium Antebrachii. — The Development and Significance of the Sesamoid Bones of the Human Hand.

PAGE

REPORTS OF SOCIETIES.

AMERICAN GYNECOLOGICAL SOCIETY. TWENTIETH ANNUAL MEETING, BALTIMORE, MAY 28, 29 AND 30, 1895 493

Abdominal Section for Puerperal Septicemia. — The President's Address. — The Relations of Lithemia to Diseases of the Pelvic Organs in Women.— Renal Insufficiency in Gynecological Cases.— Indications for Total Castration by the Vagina. — Vaginal Hysterectomy for Uterine Myomata and Diseases of the Adnexa. — Conservative Surgical Treatment of Para- and Peri-Uterine Septic Diseases.

RECENT LITERATURE.

A Treatise on the Nervous Diseases of Childhood, for Physicians and Students. By B. Sachs, M.D. New York: William Wood & Co. 1895 496

Pathology and Treatment of Diseases of the Skin. By Dr. Moriz Kaposi. New York: William Wood & Co. 1895 497

The Medical News Visiting List for 1896. Philadelphia: Lea Brothers & Co. 1895 497

A Manual of Organic Materia Medica. By John M. Maisch. Phar.D. New (sixth) edition, thoroughly revised by H. C. C. Maisch, Ph.G. Philadelphia: Lea Brothers & Co. 1895 497

EDITORIALS.

THE SYMBOL OF MEDICINE 498

THE LUNGS OF ONE OF KOCH'S EARLIEST TUBERCULIN PATIENTS 498

MEDICAL NOTES 499

The Alvarenga Prize.— Professor Von Bardeleben's Successor. — Small-Pox in London. — The Return of Influenza. — Increase of Diphtheria in London. — The William F. Jenks Memorial Prize.— Splenectomy for Injury.— Liquid Air for Commercial Purposes.

New England.
Acute Infectious Diseases in Boston.— University of Vermont, Medical Department.— The Danger from Electric-Light Wires.—Yale University, Medical Department.

New York.
Should School Recess be Lengthened? — Typhoid at Watertown, N. Y.— Increase in the Mortality from Diphtheria. — Death of Dr. Pemberton.

CORRESPONDENCE.

THE STUDY OF DERMATOLOGY IN EUROPE. *Charles J. White, M.D.*, Boston. (Continued.), 50

DIPHTHERIA ANTITOXIN AT THE NEWTON HOSPITAL. *By Kenelm Winslow, M.D.*, Newton 50

MISCELLANY.

MEDICINE AND SURGERY AMONG THE AUSTRALIAN ABORIGINES 50

RECORD OF MORTALITY, NOVEMBER 2, 1895 50

METEOROLOGICAL RECORD, NOVEMBER 2, 1895 50

NAVY SERVICE 50

SOCIETY NOTICES 50

HARVARD MEDICAL SCHOOL. EVENING LECTURES 50

RE-APPOINTMENT 50

RECENT DEATH 50

BOOKS AND PAMPHLETS RECEIVED 50

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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See pages 16, 17, 18 and 19.

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See Advertisement on Page 13.

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See Advertisement of

VINOLIA SOAP,

PAGE 23.

Original Articles.

THE LEGISLATIVE PROVISIONS FOR INSANE CRIMINALS IN MASSACHUSETTS.[1]

BY ARTHUR H. HARRINGTON, M.D.,
Medical Director of the State Asylum for Insane Criminals, Bridgewater, Mass.

If we study the legislation of the State of Massachusetts from an early period which makes provision for the insane, we shall find at quite an early date, as early in fact as 1816, a statute providing for the custody of certain persons belonging to the class called the "criminal insane." This statute provided that if persons, while being held for crimes and offences, were found to be dangerously insane, they should be committed by the legal authority "to prison." This law stood upon the Statute Book until 1832, the object of it being apparently to merely protect the community against *certain* dangerously insane persons.

The question of medical treatment does not appear to have entered to any extent into the care of such persons, but it must be remembered that previous to 1834, the prisons and gaols were the common receptacles for the *insane* as well as criminals, and the condition of the *insane criminal* may have been no worse than that of the insane in general who became public charges.

In the year 1832, an act was passed authorizing the commitment of the persons designated in the act of 1816 to the State Lunatic Hospital at Worcester, as soon as it should be opened. And soon afterwards provisions were made for the commitment of *all* penal cases becoming insane, to the State Lunatic Hospital.

The year 1832, then, may be regarded as marking the beginning of special legislative acts which have had in view the care and the cure of the insane of the convict and criminal class.

The provisions of these acts have placed the convict and criminal insane on an equal footing with all other insane persons who are cared for at the public expense, as far as affording them conditions which would contribute in the highest degree to their care or to the amelioration or cure of their mental disease. All of these provisions reveal a sentiment the equity of which no one will deny. The insane person, no matter what his moral status or antecedents or how he may be regarded by the light of the law, whether he is innocent of crime, or a convicted felon, is *one* sick and suffering, and the common sentiment of our time dictates that all such are equally entitled to care, to measures of relief or to conditions which will promote recovery from mental disease. Massachusetts has for many years responded fully to this sentiment; but she has done so by bringing the insane of all classes, without regard to their moral status, their antecedents, or their position before the law, together in the wards of our State hospitals. In no other way was it regarded as practicable by the State to give the insane of the *criminal* class the care which persons mentally diseased ought to have.

But actual experience has demonstrated, both from the material and moral standpoint, the disadvantage and the impropriety of treating under one roof the criminal and non-criminal insane. Abundant testimony to this effect is to be found in hospital reports. The presence of criminals serves in a great measure to retard the diminution of the use of restraint of all kinds. Windows, bars, locks and doors must be so constructed as to foil ingenious attempts at escape. The comfort and liberty of innocent persons has often to be sacrificed for the sake of security, when there are criminals upon our wards who are still under sentence.

The injustice as well as the impropriety of this system, it seems to me, could not fail to force itself upon the minds of all who have seen upon the wards of our State hospitals those whose lives have been vicious and criminal, side by side with innocence, with respectability, and with those who have been honored citizens in our midst.

But we have only to go outside the statutes, to public documents in which questions relating to the insane are discussed, to find that for many years there has been a strong sentiment existing in Massachusetts, which has been at times an active one and which has called emphatically for some legislation which would relieve the hospitals of the convict and criminal class, and at the same time afford this class the same care and treatment for mental disease which they ought to receive and which they have received in the State hospitals. We shall see in what follows how this sentiment and this demand has been met by the State.

In the year 1864 an appropriation was asked of the Legislature to establish on the lands of the Tewksbury Almshouse an asylum for chronic and harmless insane. This was obtained. At the same time the advocates of an establishment for the insane of the *criminal class* urged an additional appropriation for the establishment of a receptacle for insane criminals at the same place and in connection with the chronic asylum. This plan met with great opposition from the projectors of the chronic asylum. Not that they were opposed to some provisions which should relieve the hospitals of the insane criminals, as far as I have learned, but that they *were* opposed to the plan for connecting it with the asylum for chronic insane at Tewksbury. However, a bill was passed authorizing an additional appropriation for the establishment of the said receptacle in connection with the asylum at Tewksbury, but the opponents of this measure appear to have done more effectual work after the passage of the act than before, for the asylum for chronic insane at Tewksbury was established, that for *insane criminals* was not. I am informed that *two years* were suffered to elapse without drawing upon the appropriation for the Receptacle for Insane Criminals; and according to the State law the act, in consequence, became void. And thus ended this bit of *negative legislation.* I cite this in order to show that we thus have on record more than thirty years ago the existence of the sentiment in Massachusetts which demanded the separation of the criminal and the non-criminal insane.

From time to time since 1864, the subject of separate provision for the criminal insane has been recurring, and has been forcibly presented to the State on many occasions. At one time "the impropriety and injustice" of thus associating the criminal and the innocent was brought to the notice of the Governor and Council. At one time the State Board of Lunacy and Charity were requested by the Legislature to make a report upon the subject. The Board of Lunacy, as well as the managers of the hospitals, had plans to propose; but when the subject came to the point of legislation, there were so many conflicting opinions that nothing could be accomplished, and the whole matter was allowed to drift.

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[1] Read before the New England Psychological Society, September 24, 1895.

These matters to which I have merely made reference bring us down to about the year 1886. I wish now to enter briefly upon a period extending from 1886 down to the present day, which in relation to our subject, might be called the *Period of Evolution at the State Farm — of an institution which at the last session of the Legislature received the official name of "State Asylum for Insane Criminals."* I wish to give you briefly the history of this period, for in no other way I think, can I bring to your minds so clear a comprehension of the present status of this asylum, of what has been accomplished in legislation the past year, and in how far there was a falling off in what was actually accomplished from the original purpose and desire. The facts from which I gather this history are found in reports and public documents, and I am also indebted for much information to Mr. H. M. Blackstone, the Superintendent of the State Farm.

If we go back to the year 1886, we shall find that the institution at Bridgewater, known as the Bridgewater Workhouse (the name has since been changed by legislative enactment to "State Farm"), comprised two departments: first, a workhouse department, to which were committed persons found guilty of vagrancy and common drunkenness, and to which they were sentenced for short terms usually; and, second, an almshouse department. These two departments still exist.

The number of the inmates, both of the workhouse and almshouse departments, varied greatly at different seasons of the year. In the winter months the number present would crowd the capacity of the institution, while during the summer months the number would reach low-water mark. The institution possessed a large farm, which with plenty of labor could be made very productive, but just at the season when labor was wanted the most, the able-bodied prisoners and paupers were away upon their "annual vacations," and would not return till fall or winter set in.

In casting about for some remedy for this condition the management of the institution observed that the State lunatic hospitals were complaining of overcrowding and its attendant disadvantages. The thought suggested itself that if authority could be obtained to make provision for some of the chronic and harmless insane at the State Farm, that the State hospitals would be willing to give up some of their numbers of the chronic and harmless class. It was expected that if this could be done, the State Farm would thus obtain one class of inmates whose numbers would remain nearly constant, who might be employed upon the farm advantageously to themselves, and besides relieving the hospitals to some extent of their numbers and giving to the State Farm a class whose labor could be profitably utilized, they could in addition to all this be supported at considerably less cost than in the large hospitals.

This plan was so feasible and the arguments so conclusive that the Legislature readily authorized the erection at the State Farm at Bridgewater (Chap. 219 of the Acts of 1886) of buildings not to exceed in cost $50,000, and to accommodate not less than 125 chronic insane men of the pauper and harmless class. Work was begun at once. The buildings were completed the following year, and by the 1st of October, 1887, there had been transferred thereto 130 patients of the quiet and harmless class. The buildings which were built within the appropriation, and which were found capable of accommodating 150 patients, were admirably adapted for just the purpose for which they were intended, namely, the care of the chronic and harmless insane; and as far as this class were concerned, the reports show that the "claims and predictions of the advocates of this movement were fully realized." But within one or two years of the first transfer to this asylum the management began to perceive that the interests of the State hospitals were being consulted in a greater degree, in the class of persons transferred, than had been anticipated by the State Farm people; for among the persons transferred began to come quite a large number of the *criminal class*. Thus far none of them could be said to be otherwise than harmless, but they were of a different stamp than had been looked for. They did not seem to evince that interest in farming which it was hoped they would; but, on the contrary, they seemed much more anxious to exhibit their skill as "fence-jumpers" and "lock-pickers," as I learn from one of the reports, than they did as agriculturists.

This contingency was one that had not been provided for in the plan of the buildings constructed, but it became necessary to provide for it at once, by some additional construction which would be more secure against escapes; but no sooner were the means to do this asked of the Legislature, than the authorities of State hospitals came forward, and urged strongly that if further appropriation were made for buildings for the insane at Bridgewater, that the transfers thereto should hereafter be wholly from the *convict* and *criminal* class, or those who were *criminal* or *vicious* in their tendencies. The appropriation for a stronger building was obtained, but the statute authorizing it (Chap. 89 of the Acts of 1888) assumed this form, "that there be allowed and paid out of the treasury of the Commonwealth a sum not exceeding $60,000 for the purpose of erecting and furnishing strong buildings for *insane male criminals*, providing for not less than 100 patients." This building was completed and occupied in the fall of 1890, making the capacity of the department for the insane 250.

The reports of the State Farm from this time on, contain frequent reference to the changing character of the inmates of the asylum. I will quote from the superintendent's report of 1892: "The pauper and harmless class of inmates with which this asylum first started, are fast disappearing. . . . It will be readily seen that very soon the entire number will be *convicts* and *criminals*. Of the present number (230), there are 127 convicts from the State Prison and houses of correction. The northwest wing, containing fifty strong rooms, is all the sufficiently strong accommodation we have for safe care and keeping of this dangerous class of men. The transfers to the asylum, are all now from the class, who almost without exception, should have a single strong room. To undertake their care in the older asylum buildings on the dormitory plan is positively unsafe and dangerous — escapes will be frequent — and too great hazard attends them." This same report asked for an additional building containing 75 strong rooms. The Legislature saw the necessity for this addition and this building is now nearly completed and is calculated to raise the capacity to 325.

One other stage in the development of this institution was reached by an act (Chap. 251 of the Acts of 1894) the important clause of which reads, "that no person shall be hereafter transferred thereto [meaning the lunatic wards of the State Farm] from a State lunatic hospital, except those transferred and committed to said hospitals from the State Prison, the Massachusetts Reformatory, the jails and the houses of correction of the several counties and the House of Industry of the City of Boston."

This act gave by statute law, it will be seen, a distinct class, namely, *convicts* and *criminals*, and those alone, to the lunatic wards of the State Farm.

Thus far we have seen the gradual transition of this department of the State Farm from its original plan, which contemplated the presence of only 125 insane of the pauper and harmless class, to an organized asylum for the congregation of over 300 of the most difficult class of the insane to care for and control. The originally lightly constructed buildings, with large dormitories and few single rooms, have had added to them strong buildings containing single rooms only, for the safe-keeping of insane men, who in many instances have long and even life sentences over them, and who sometimes show great ingenuity and persistency in circumventing and overcoming the means put in their way for preventing escape. Among them also are men who from their form of insanity are dangerous. Among them also, are those who respond to measures adopted for their improvement or even recovery.

Much praise is due those who have superintended the general management of this asylum and organized its details up to the time to which I have now brought this history, namely, 1894. But the *lay management* of the State Farm has not been slow in discerning that here was a field which was strictly a professional one, and desired to be relieved of all responsibility for the asylum department, and to place it where it properly belonged — on medical shoulders.

A complete separation of the insane department from the workhouse and almshouse departments by statute was recommended by the Trustees and Superintendent in their last report.

I quote from the Superintendent's report, as follows: "Inasmuch as its character [referring to the asylum department] has so radically changed, having in fact become one of the most difficult class of patients to restrain and manage and requiring expert medical direction, it is a serious question whether it should longer continue as a ward of the State Farm or be separated by statute law and managed distinctly as an independent department or institution." I also quote from the Trustees' report, as follows: "After a careful examination of the subject by the Trustees, as well as for reasons presented by the Superintendent in his report, it is deemed important and necessary that the legislative authority be given for the entire separation of the management of the insane from the other departments of the institution." During the legislative session of 1895 this matter was brought before the Joint Committee on Charitable Institutions in detailed form.

The plan most desired by the Trustees and local management was an entire sundering of the department for the insane from the rest of the institution under a separate Board of Trustees.

The plan of separation, however, met with decided opposition by the Legislative Committee, the main objections focusing around the policy which is opposed to the multiplication of institutions in Massachusetts. It was evident that there was no disposition on the part of the Committee to look favorably upon any measure which had as its basis a separation by statute law of the asylum from the rest of the institution. But with a view to relieving the lay-superintendency, the management still insisted that there should be some statutory enactment recognizing the professional factor in the conduct of the asylum.

A bill was finally drawn up which was a result of conference between the Legislative Committee, those representing the interests of the State lunatic hospitals, and those representing the interests of the State Farm. [I will say here that the work of formulating this bill was done by the Hon. Edwin B. Harvey, M.D., Chairman of the Committee on Public Charitable Institutions of the legislative session of 1895; by the Hon. Francis C. Lowell, Trustee of the Worcester Lunatic Hospital, and member of the Judiciary Committee of the legislative session of 1895; by Mr. H. M. Blackstone, Superintendent of the State Farm, and others.]

This bill received the recommendation of the Joint Committee on Public Charitable Institutions; it passed the Legislature without opposition, and became a law in June, 1895.

The provisions of this act, which follows, may be divided, first, into those which are of *local* interest and importance, and, second, into those which are of *general* interest and of *vital* importance to the State lunatic hospitals.

Chapter 390 of the Acts of 1895.

An Act to establish an Asylum for Insane Criminals at Bridgewater, and to provide for and regulate commitments and removals to the same, as follows:

Section 1. So much of the Hospital and Almshouse Departments of the State Farm at Bridgewater as was established for the care and maintenance of insane men under the provisions of Chap. 219 of the Acts of the year 1886, Chap. 89 of the Resolves of 1888, and Chap. 48 of the Resolves of 1893, shall hereafter be known and designated — the State Asylum for Insane Criminals.

Sect. 2. The Superintendent of the State Farm, subject to the approval of the Trustees, shall appoint a physician as medical director of the said Asylum, and shall fix his salary. Said director shall have the care and custody of the inmates of the Asylum, and shall govern the same in accordance with the rules and regulations approved by the Trustees.

Sect. 3. The insane male persons mentioned in Sect. 10 (insane convicts in the State Prison or Reformatory Prison), Sect. 12 (insane convicts in a house of correction or prison other than the State Prison or Reformatory Prison), and Sect. 14 (insane persons held in any jail for trial or for sentence, except for a capital crime), of Chap. 222 of the Public Statutes, and Chap. 320 of the Acts and Resolves of the year 1885 (any insane prisoner confined in the Massachusetts Reformatory), shall hereafter be removed to said Asylum for Insane Criminals instead of to a State lunatic hospital.

Sect. 4. The description of insane male persons mentioned in Sect. 15 of Chap. 213 of the Public Statutes (person held in prison on a charge of having committed an indictable offence, but not indicted by the grand jury by reason of insanity), and Sect. 16 (indicted person found to be insane at time of trial), Sect. 19 (person acquitted by reason of insanity), and Sect. 20 (person indicted for murder or manslaughter acquitted by reason of insanity), of Chap. 214 of the Public Statutes, may be hereafter committed or removed to the Asylum for Insane Criminals instead of to a State lunatic hospital as therein provided when in the opinion of the court said insane persons are criminals or have been vicious in their lives.

SECT. 5. The State Board of Lunacy and Charity is hereby authorized to transfer to and from the State lunatic hospitals and the Asylum for Insane Criminals any of the description of persons mentioned in this Act, whenever in its judgment such transfer will insure a better classification of insane criminals.

SECT. 6. The insane persons heretofore transferred to said Hospital and Almshouse Departments and held therein in accordance with existing law, shall be held in said Asylum as though removed thereto under the provisions of this Act, and the State Board of Lunacy and Charity may hereafter transfer and commit thereto any inmate of a State Lunatic Hospital, of the Worcester Insane Asylum or of the State Farm (Prison or Almshouse Department) of the description of persons mentioned in Chap. 251, of the Acts of the year 1894 (persons committed from the State Prison, the Massachusetts Reformatory, the jails and houses of correction of the several counties, and the House of Industry of the City of Boston); and the provisions contained in Sect. 2 of said Chapter relative to the return of such persons to the prison or other (penal) institution, to which they were originally committed, shall apply to all persons removed to the Asylum for Insane Criminals under the provisions of this Act.

SECT. 7. Sect. 21 of Chap. 214 of the Public Statutes is hereby amended by inserting after the word "Hospital," in the first line of said section, the words, "or to the State Asylum for Insane Criminals," so that said section will read when amended, "any person committed to a State Lunatic Hospital or to the State Asylum for Insane Criminals under the preceding section (persons found insane and committed after indictment for murder or manslaughter) may be discharged therefrom by the Governor, by and with the advice and consent of the Council, when he is satisfied after a hearing of the matter that such person may be discharged without danger to others."

The radical feature of this act is that portion of it which provides for the commitment of the insane criminals directly to this asylum instead of to the State lunatic hospitals as heretofore. Also, certain of the so-called "court cases," which include persons arrested for crime, but found to be insane, will be committed directly to this asylum if the court determines that they "are criminals or have been vicious in their lives."

It is not claimed that this is a perfect bill in all respects. It was framed to meet the exigencies of the case, and we hope the future will remedy its faults.

Thus I think I have shown you clearly the successive steps by which this department of the State Farm has undergone a complete transition. The original plan of providing for a few chronic and harmless insane having gradually given way to the establishment of an asylum, the function of which is to be the custody and treatment of the insane criminals of the State. You have seen wherein there has been a failure to establish this asylum upon the independent basis recommended by the Trustees. There has been gained, however, to a considerable degree a needed recognition of the professional element in its management; but the greatest gain, I think you will all agree, is the relieving of the State hospitals of the presence of *all* the convict, and *some* of the criminal insane or so-called "court cases." This is a measure, it must be remembered, which an effort has been making to accomplish for thirty years. The State also by this provision avoids the expensive and roundabout way by which these cases have heretofore reached the asylum at the State Farm, namely, through the State hospitals.

This, then, is an account of the way up to the present time in which Massachusetts has met the demand for separate provision for her insane criminals; but the question now arises in the minds of those thoroughly acquainted with all the conditions, whether as regards the future there has been a complete solution of the problem. A few years ago the State Board of Lunacy and Charity, soon after the transfers to this asylum began to be of the criminal class, stated in their report as follows: "The question of a separate criminal asylum so long agitated has thus been practically settled, at no great cost to the State, and to the relief of all concerned." But even *now*, with what has been accomplished since these words were written, it seems to me that Massachusetts should be slow to congratulate herself that she has disposed of all the questions relating to the care of her insane criminals.

At present this asylum is *one* department of a large institution, the other departments of which differ widely from it; but on account of this relationship the asylum must necessarily be dependent upon general conditions which govern the institution as a whole, and in this particular case, moreover, the asylum is necessarily subject to general conditions which govern *two* State institutions, namely, the Tewksbury Almshouse and the State Farm — both being managed by the same board of Trustees. The practical result of such relationship will be, I think, with departments differing widely in their nature and needs, that one or the other may suffer, because first, general and relative conditions have to be considered.

For these reasons, then, Massachusetts, which has allowed the question of the separate care of her insane criminals to drift for many years and to almost take care of itself, may yet be brought face to face with conditions and problems which cannot be *properly* settled on any narrow basis. I think it is a question whether the problem can be properly solved short of establishing an institution upon a separate site, and in buildings planned and adapted from the beginning for the *care*, *treatment*, and *custody* of the *insane criminals* of the State.

NOTE.— At the meeting of the New England Psychological Society, September 24, 1895, at which this paper was read, the following resolution was passed:

"That it is the sense of this meeting that the State Asylum for Insane Criminals should be separated from the other departments of the State Farm, and placed under a special Board of Trustees."

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A STUDY OF GUNSHOT WOUNDS WITH REFERENCE TO THE PROXIMITY OF THE WEAPON AT THE TIME OF FIRING.

BY J. N. HALL, M.D., DENVER, COL.,
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OF very great importance in certain cases of shooting, and especially in deciding the question of murder or suicide, is the inquiry as to whether the weapon was held close to the body or not at the time of firing. Fortunately we are generally able to answer this question with considerable accuracy.

The factors of most importance in deciding this matter are the staining left by the grains of powder blown out with the ball, and the brand, or burning by the gases of combustion, when these conditions are to be found. When they are not present, the weapon must have been held at a considerable distance, for, if fired close to the body, some marks would have been left to prove it. In the case of the shotgun, beyond the distance at which powder-marks may be seen, a study of the area covered by the wounds, owing to the spreading of the shot, is often of assistance, while in the case of the rifle, beyond the distance mentioned, an accurate judgment is impossible. As regards the shotgun, it has been stated that at such a distance that the shot would enter as one body and thus give rise to but one orifice, the body would certainly be burned. That this rule may be at fault at times has been pointed out in the instances which I have quoted elsewhere,[1] in which a whole charge of shot has remained intact even at a distance of a hundred yards, which phenomenon is explained later in this article.

But even if the wound be stained by the powder we still cannot form a very accurate judgment until we know something of the size and character of the weapon with which it was inflicted. With any hand weapon one could say that it had been held within a few feet, but a rifle or shotgun would cause as much staining and burning at two or three feet as a revolver would at a quarter of the distance. It is likely that the staining is less than in the time of the older writers upon this subject, for the quality of the powder has been improved very greatly, and the staining is less as the powder improves in quality, because the grains are more perfectly burned. Upon the fact that they are not completely burned depends the tattooing. A few grains, probably in process of combustion, are blown out with the ball, and although from their lightness they are unable to travel far; if the target be within a few feet, they are often found sticking in it, if the material of which it is composed render this possible.

If the grains of powder be too large for the style of weapon in which the shooting is done, as is often the case, many of them will be found about the ball hole in the target if it be at short range. If the powder be so highly glazed as to ignite with difficulty, the same result may be found. But we are not so much exposed to error in this matter as before the general use of breech-loading weapons, since the ammunition used in them, and especially in pistols, which more especially concern us, is commonly loaded at the great factories, where particular care is taken that each variety of shell shall be loaded with the exact size and quality of powder which shall burn most thoroughly, and thus give the best ballistic results.

Since revolvers are in common use which vary in size from .22 calibre to .45 calibre, and with barrels from two to eight inches in length, it is obviously impossible to lay down any precise rules as to the exact distance at which staining may take place. General limits may be established, but in any given case, one must be guided by experients made with the same kind of weapon and ammunition used in the shooting. When we say "with the same kind of weapon," we mean not simply one of the same calibre and length of barrel, but of the same style of manufacture, as nearly as can be obtained; for the manner of construction of the weapon may exert as great an influence in determining this question as its calibre. The better-made weapon stains at a greater distance because it confines the gases more tightly and hence produces better ballistic results. Thus it may be stated broadly, that the staining by grains of powder, and the brand, or burned spot where the gases of combustion have impinged, may be seen at a greater distance in case a well-made weapon has been used, and the brand excels in distinctness as well under these circumstances.

In making the experiments to determine these points, one should see that the weapon is in approximately the same condition as regards the amount of fouling in the barrel as the one with which the shooting was originally done. If the pistol has been used and not cleaned, the accumulated dirt is blown out with the first discharge, and may so obscure the target that nothing can be learned from it. There is also the danger that the smutting from this dirt may be confused with the staining from the powder. The bluish stain at the immediate edge of the bullet hole, which is seen regardless of the distance of the weapon, and which comes from the lead of the bullet, should not be confused with the appearances we are considering.

I know of nothing better for these experiments than the white blotting paper recommended by Dr. Fish, in his original article concerning the brand, although I have tried many different substances. Fastened to a box filled with fine sand, the shooting may be done with absolute safety, if one only avoids striking the nails with which the box is fastened.

In a general way it may be stated that the tattooing from the powder-grains, as well as the brand, will be more distinct as we approach the target, and as we use a heavier weapon, or a better-made one. If the muzzle is held within an inch or so of the target, however, there may be merely burning about the edges of the bullet hole, without brand or tattooing, all being merged with the blackening about the edges of the orifice. I have seen this appearance repeatedly in the human subject.

The brand is not generally seen with pistols at distances exceeding a foot, while with the shotgun or rifle, this distance is entirely too small, but varies with the size of the weapon and its load. At a distance several times that at which the brand may be found, the tattooing is still distinct, for the grains of powder are carried several times as far as the gases of combustion which produce the brand, being much heavier. The size of the tattooed spot increases up to the point at which it grows fainter, as the distance is increased, and the same rule applies to the brand, although I think to a less degree. The natural spreading of the powder-grains and the gases accounts fully for this phenomenon. But the tattooing has very different limits from those of the brand, the latter being found only above the bullet hole, while the tattooing is to be found all around it, but more above than below. The area covered increases as we increase the distance, as mentioned. The brand, however, although at very close range showing immediately above the bullet hole, retreats farther and farther above it as we increase the distance, until it becomes too faint to be distinguished. [The term *above* is used arbitrarily to indicate the direction toward which the sight of the weapon points, which is really above in all cases excepting when the pistol is turned to the right or left, or inverted, in making experiments or for other reasons.]

Inasmuch as the brand is superficial, it disappears as the wound heals, provided the wound has not caused death, whereas the tattooing, being largely beneath the surface, remains, although it becomes fainter, for some months, and assumes a bluish tint rather than a black one, which it has at first. If, then, the patient recover, the brand disappears, while the tattooing remains in the great majority of cases, always excepting those in which the true skin is not involved. It should be noted, however, that the majority of grains of powder in almost any case are merely lodged superficially in the epidermis, and spontaneously separate in a few days if not removed sooner, leaving absolutely no mark, so that the tattooing is generally very much less than would appear likely at the time of infliction of the wound. In one trial, in which the direction of the sight of the weapon at the instant of discharge was of vital importance, I was obliged to take the evidence of the attending surgeon, which fortunately was conclusive, as to the presence and location of the brand, while the tattooing was still perfectly distinct, many months after the shooting, as it remains to this day.

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[1] "Gunshot Wounds in their Medico-Legal Relations." International Medico-Legal Congress, 1893.

For a full understanding of the importance of the brand, an explanation of its nature and the reasons for its constant position will be in order. The entire credit for this explanation is due to Dr. Fish, who published it in the *Boston Medical and Surgical Journal* of October 2, 1884.

It was, of course, known that it was due to the burning by the gases of combustion, which really constitute a considerable flame, as may be seen by watching a gun fired after dark. Dr. Fish showed that the reason for its constant position toward the side of the bullet hole to which the hammer and sight of the weapon had been directed at the instant of firing was that the pistol rebounded because of the fact that it was supported below its centre, owing to the drop of the handle. The force of recoil being applied above the point at which the pistol is supported, the weapon tends to revolve around this point. In other words, the kick of the pistol throws its muzzle upwards. The gases of combustion, being necessarily behind the ball, tend to follow the new direction of the barrel, assumed because of the rebound. Hence they strike above the bullet hole. As proof of this explanation, Dr. Fish showed that if the pistol be confined in a vice, the brand is equally distributed around the orifice, regardless of the position of the hammer, for there can then be no rebound.

In some experiments some years ago, in connection with a trial for murder, I showed the jury that with a single-shot rifle, the brand shows slightly above the bullet hole, the recoil upward being much less than with a revolver at similar distance, because the line of application of the force passes much nearer the point of support of the weapon than in the revolver, owing to its much greater length. With the double-barrelled gun the brand shows slightly above and to the side of the barrel fired, for the barrel is a little to one side of the centre of the weapon. This statement, naturally, does not apply to double-barrelled weapons in which one barrel is above the other, as in certain rifles and combination guns.[2]

With this explanation it is easily seen why the brand is farther from the bullet hole, as we increase the distance from the target. The angle of rebound remains the same, but the line upon the target which subtends this angle increases with the distance and the brand is always at the upper end of this line. So far as I have studied, this point with its explanation, has never been made before.

Since the largest pistols equal if they do not surpass the smaller guns in ballistic power, it seems to me useless to try to lay down rules applicable to any case, as to the distance at which the brand and the tattooing are to be found, and especially as these points vary with the kind of ammunition and the style of manufacture of the weapon. I shall therefore give only the results obtained with the .23 calibre revolver, which may be taken as a guide in similar experiments with other weapons if the facts concerning them be desired.

Using the "BB" or fulminate caps, which contain no gunpowder, but only the fulminate of the cap itself, the brand may be seen at times distinctly up to three inches, resembling that from gunpowder. The staining around the brand, however, is of a bluish or slate-colored tinge. The tattooing may be seen up to about a foot, from unburned residue, but appearing somewhat like the marking from powder. The blotting paper was not fired at the shortest distance tried, two inches, although at this distance there were seen burned spots on the paper where the fulminate had burned it superficially, although not to such a degree as to give rise to a flame, or to cause the fire to continue.

With the common .22 short cartridge, which uses about three grains of powder, at two inches the paper was fired but once in four trials and then but slightly. The brand showed very distinctly upon the edge of the bullet hole, in the direction toward which the hammer was held. At four inches the brand had retreated distinctly from the edge of the orifice and showed with great plainness. The paper did not fire in any instance at this distance, nor at greater ones. The tattooing was distinct, and more above the bullet hole than below. At six inches the brand was fainter and farther removed from the orifice. At eight inches it was not distinct enough to be made out absolutely in all cases, while at a foot it had entirely disappeared. But even up to twenty-four inches the tattooing showed to a slight extent.

With American wood powder, loaded in the short cartridge, the paper fired at two inches on one occasion only and never at a greater distance. The brand was tolerable distinct at two inches, faint at four and not seen at greater distances. The tattooing was less than with black powder, and at a foot resembled that from the latter at two feet. The staining was rather slate-colored than black.

With Schultze powder the brand is seen but faintly as compared with the brands from the other powders and four inches was the greatest distance at which it could be made out. The bluish staining was distinct, but no real tattooing was found, for in this powder the combustion is much more perfect than in those mentioned. The staining is apparently made by the gases alone and practically disappears at six inches. Unless this powder be ignited by a strong primer, and be also tightly confined, by means of wadding or otherwise, it is not well burned and then portions of the unburned residue may be seen sticking about the bullet hole, but of flesh color or brownish shade. The paper was not ignited in any case, even at two inches.

With larger weapons these distances are materially increased, as we increase the power of the weapon, but, although I have made many experiments in this line, the record is too long for insertion here. In any given case, knowing the character of the weapon, the ammunition and the points particularly in dispute, one may easily determine these points by experiment. With some of the larger revolvers, tattooing to a slight extent is possible up to even six or eight feet, it is stated, although I have never seen it at quite so great a distance.

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[2] This case was reported in the Boston Medical and Surgical Journal, August 14, 1890.

In the case of the rifle or smooth-bore gun, up to the point at which the brand and tattooing disappear, experimental research as just indicated would throw much light upon the question of the distance at which the weapon was held. Beyond this distance, I do not think any conclusions could be arrived at in any given case worthy of confidence, excepting that, at a very great distance, there might be evidence from the wound that the ball was nearly spent, or had turned sidewise, which a rifle bullet from a clean gun practically never does, unless at great range. Such a case could scarcely call for a medico-legal investigation. As to the peculiar appearances presented by wounds from rifle bullets, they could not be definite enough to be of any value in this connection.

In the case of the rifle or revolver, there is one element not yet considered which might possibly, under certain circumstances, be of value. I refer to the fact that, when the barrel is very foul, the ball may turn sidewise in its course in going a very short distance. "Leading," as the deposition of lead and smut is called, is especially a cause of this trouble. The chief use of this knowledge would be in proving that this turning sidewise of the bullet was not to be taken as evidence that it had become spent, inasmuch as I have even seen it occur with a 40–82 Winchester rifle at a distance of forty feet, repeatedly, because of the presence of dirt in one groove just within the muscle. I have shown elsewhere that this turning may occur within six inches of the muzzle in small pistols of poor quality. "Leading" at the muzzle is much more effective than if further down the barrel, in producing such a result.

With the shotgun and smoothbore, if of large calibre, especially, so that a heavy wad is used in loading, it is possible that one might occasionally find that the wadding had struck and left a mark which would be of use in this connection. I have seen many of these marks made by shotgun wads at close range in "patterning" shotguns, but not at distances much exceeding five yards. I have, however, often seen them travel several times this distance in the air in shooting upward, or at the trap. But in any case it is likely that one would get a better idea of the distance from the effect of the shot upon the person, than from so uncertain a matter as this.

The spread of the shot from a shotgun must be determined experimentally under conditions similar to those under which the shooting has been done. The examiner should be cautioned that the shot may "bunch" and all strike together up to twenty, forty, or even a greater number of yards, in using the breechloader, owing to the fact that the paper-shot shell used is occasionally detached from the metallic base, and, being expelled with the shot, holds it together. From this cause I have known the head of a rabbit to be taken off clean, as if by a rifle ball, at such a distance that ordinarily one would have expected only a few shot to strike the animal's body. A friend hunting with me shot into a flock of ducks at about one hundred and fifty yards, merely to cause them to fly in hope of getting a shot. As he used ordinary duckshot, he was amazed to find that he had crippled three of them, but, in reloading, he found only the base of the shell in the barrel fired. The explanation was then easy. The shot had been held together until just before the flock was reached, when, bursting its confining shell, it scattered and did its work, as mentioned. Several devices are upon the market which cause shotguns to shoot closer at long ranges than otherwise, as the linen-thread-wound cartridges and the buckshot strung upon a stout cord or wire. Other devices cause the shot to scatter rapidly for certain kinds of close shooting, even in choked guns. None of these are, however, commonly used.

In one case submitted to me in which a man had been killed with a shotgun, and no burning or tatooing was found, the shot had struck only the posterior cervical region, producing instant death from injury to the cord. Although I had no opportunity to examine the weapon in this case, it seemed to me that it was perfectly safe to state that the range must have been between six or eight feet and fifteen or twenty feet, as judged by the spread of the shot which had struck the neck, for an ordinary load had apparently been used.

The early authorities thought that some idea as to the distance at which a weapon had been held might be gained by noting whether the ball had penetrated or not,— if it had not, it being assumed that it was because it had lost its force before striking the body. There was no doubt some reason, in certain cases, in this, when the comparatively inefficient weapons of a century ago were used, but at this time no dependence whatever is to be placed upon such evidence. Military surgeons quote examples in which a rifle ball has passed through two men and lodged in the body of a third, even at a considerable distance, and I have three times known of three antelope being killed by one ball, and once of three deer in similar manner. On the other hand, I have known a heavy winter overcoat to stop three bullets fired at distances varying from five to ten feet, from a cheap revolver, in an attempted homicide, all three dropping to the floor upon removing the overcoat, to attend to wounds of parts not covered with this garment.

Under certain circumstances one may find that the clothing of a person shot at has been fired by the flame issuing from the weapon at the instant of discharge, and burned to a greater or less extent. This is proof that the shot must have been a close one, although rags used as wadding may set fire to grass, for instance, at a distance of some yards. This latter contingency could scarcely be of moment in a medico-legal investigation. With a .38 calibre revolver, using the Smith & Wesson cartridge, I found, in experimenting to learn the distance at which a cambric night-dress might be fired, that, at a distance of six inches or a little over, it was burned every time, so as to necessitate extinguishing the flame to prevent the destruction of the fabric. At nine inches it did not ignite on one occasion, although it did on many others, and at twelve inches it ignited but once out of several trials. It has been shown that cotton-batting will ignite at a considerably greater distance. Inasmuch as this firing depends so much upon the size and character of the weapon, and the firmness of texture of the fabric tested, as well as its other qualities, it would be best, in each individual instance, to try the experiments under the exact conditions known to exist, so far as they could be learned, rather than try to lay down any arbitrary rules in this connection.

It should be noted, and I have not seen the distinction made before, that this firing may take place from two separate and distinct causes: first, from the burning gases at the point where the brand shows most plainly, and, secondly, from separate partially-burned grains of powder or bits of wadding which have struck the fabric and adhered. The latter variety of firing occurs at considerably greater distances than the former, for the ignited solid bodies may be blown to much greater distances than the gases will traverse. Firmly woven fabrics fire with difficulty from the gases, although the separate fibres of such cloths as have a nap ignite readily. The burning grains of powder or wadding easily ignite any cloth that I have tried, however, if they obtain a lodgment.

I was once asked in a trial for homicide, how I accounted for the fact, that in this case, a night-dress of fine cambric had been fired, and burned extensively, while the skin showed no traces of powder-marks. The wound had been received upon the tip of the left shoulder, from behind, the ball glancing downward and causing death. From this wound was known, approximately, the direction of the weapon when fired, but not its distance, nor the direction of its hammer, as the shooting occurred during a struggle. After considerable study and experimentation, I stated that, in my opinion, this might be accounted for in two ways, or possibly by a combination of the two. If the weapon had been held with the hammer upward, as in ordinary shooting, the recoil of the weapon would have tended to make the greater part of the staining and tattooing above the wound, and, as the latter was on the very tip of the shoulder, no part of the body could have been in position to receive the brand or much of the tattooing. Further, by firing a similar pistol at a similar fabric, it was shown that, when the angle at which the weapon was held was much less than a right angle, the cloth deflected the grains of powder from the white blotting paper underneath. At twenty degrees the paper showed a few slight indentations under the points at which the powder-grains had struck the cloth, as it lay immediately upon the paper, yet the latter showed no dark stain, although long black marks appeared upon the cloth, where the grains had glanced along its surface. The original garment in this case had been too much burned to be of use. My own opinion is that both of the factors mentioned contributed to the result in this case. An obvious inference from what has just been considered is that the markings and burnings upon clothing should be most carefully studied, in arriving at a conclusion as to the distance at which a weapon has been held from the person injured.

Many instances have been recorded tending to show that absolute contact with the body may prevent the penetration of the skin even by the bullet. This was the probable explanation of non-penetration of the skin of a boy's hand in a case which I have quoted elsewhere,[3] and of certain cases of attempted suicide in which only a contusion of the skin at the point of contact of the pistol's muzzle existed, the ball dropping to the floor. I have seen nearly a dozen weapons of one kind or another which had been exploded by obstructing the muzzle in this or some other way, especially by the lodgment of snow or mud in the barrel, and hence hesitate to experiment upon a matter attended with so much danger. In my case quoted, the region about the wound was blackened, without distinct brand or tattooing.

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[3] Boston Medical and Surgical Journal, May, 1895.

Clinical Department.

CLINICAL EXPERIENCE IN ABDOMINAL SURGERY AT THE MASSACHUSETTS GENERAL HOSPITAL.

BY J. COLLINS WARREN, M.D.

THE following cases have been collected from the record-books of the hospital, and represent the bulk of the work performed during eight months of service.

Although it may not cover all the operations done during that time in my service, it represents fairly well the variety of the problems which present themselves to the hospital surgeon. An attempt has been made to follow up the subsequent histories of the cases, a task of no small difficulty. For the sake of avoiding needless repetition a great many of the cases are not reported, but a careful selection has been made from each class to show the different types of cases. It ought to be stated, however, in this connection that no case has been withheld on account of its unfavorable termination. I am much indebted for notes of cases and reports of the results to Drs. Tenny and J. S. Stone.

I regret that the facilities for bacteriological research at the hospital are not such as to enable me to make this side of clinical study a feature of the article. I am happy to be able to state, however, that sufficient funds are now in possession of the trustees to build and equip a pathological and bacteriological laboratory worthy of the hospital.

The preparation of cases for abdominal surgery has not changed materially within the last two years. The methods differ slightly in the different services.

The diet of a patient, if sufficient time be given for preparation, should be of such a nature as to leave as slight an amount of residuum in the lower bowel as possible. Liquid food without milk — such as beef-juice, broths and also eggs — seems best suited for this purpose. No active cathartics should be allowed the night before the operation. If it is thought best to clear out any fecal residuum that may be of long standing a half an ounce of castor oil may be given forty-eight or thirty-six hours before the operation. An enema is all that should be attempted the night before or the morning of the operation.

The preparation of the abdomen takes place the afternoon preceding the operating day. The skin is shaved, and then scrubbed with soap, hot-water and ether. A soap poultice (absorbent cotton covered with gauze soaked in soft soap) is then applied for two hours. The part is then scrubbed with ether, corrosive sublimate (1–3,000), and a corrosive poultice of the same strength is applied and allowed to remain on over night, to be replaced by a fresh poultice in the morning.

ACUTE APPENDICITIS.

There were in all 15 cases of this affection in which an operation was performed, with two deaths. There were a few cases admitted to the ward which recovered without operation. Five cases are selected as instructive examples of the operative treatment. In the case of J. S., the prompt interference enables one to see the condition of the appendix before the stage of suppuration and the rapid recovery which usually follows in such cases. J. M. shows well the efforts of nature to shut off the pus from the general peritoneal cavity, and the success attending efforts to wall off that cavity with sterilized gauze during the evacuation of the abscess. The next two cases, N. H. and M. G., show conditions under which it is difficult to find the appendix. In the case of N. H. the danger of leaving the appendix is well shown. Although an appendix, if left behind, is a constant menace to the patient, the danger of breaking down the protecting barrier is one that should always be carefully considered in difficult cases. The case of J. C. illustrates the danger of delay in operation. When he was admitted to the ward there were two cases convalescing from attacks in which no operation had been performed, and in one of these the symptoms resembled closely those of J. C.

In none of these cases is there a report of hernia following the operation.

In suppurating cases the stump of the appendix was tied, usually with stout catgut ligature, in order to avoid the discomfort of a slowly healing ligature sinus.

In the recurrent cases, and in those acute cases which have not come to suppuration, the ligature was tied with silk, and the lumen was disinfected with strong carbolic acid. The edges of the stump were then stitched together, and the stump itself finally buried in a fold of peritoneum.

A fold of iodoform gauze was passed down to the end of the stump in suppurating cases, and was surrounded by a wall of sterilized gauze. This was usually allowed to remain in from three to six days. In acute cases a free incision and a liberal packing of the wound has appeared to me preferable to a partial closure by stitches.

Operation, Recovery.— J. S., nineteen years of age, entered December 1, 1894, with a history of high epigastric pains, with colicky pain in whole abdomen of twenty-four hours' duration. Went to bed. Knees were drawn up, and he could not lie on his right side. Vomited (greenish) several times during the night, but no chills. Had morphia during night. General tenderness. Passed no gas. Bowels moved two days ago. Never had a similar attack before.

At entrance lies on right side, with knees drawn up. Pain seems to be paroxysmal. No collapse. Temperature normal, pulse strong and full, 96. General abdominal tenderness and tympany. Six ounces of urine drawn by catheter. No cake. Rectal examination negative. Tenderness more marked in left iliac fossa. A high enema of suds and turpentine brought down good movement and some gas. He was prepared for immediate operation. The regular incision, about three inches long, was made over McBurney's point. There was no edema of the abdominal wall. The omentum was adherent. A very little serum was found in the abdominal cavity. There was no intestinal injection. The appendix was found behind the cecum and doubled upon itself; the loops were adherent, and the whole organ was firmly attached to the cecum by adhesions, which had to be cut in order to apply a ligature. The appendix was found to be normal otherwise, and contained no concretion. It was removed, the stump cauterized and hidden in a pouch of peritoneum and bowel wall, and retained there by intestinal sutures. Continuous silk sutures to peritoneum and silkworm-gut to external wound. One-sixth of a grain of morphia subcutaneously was given. At 11.30 P. M. much pain; lying on right side and distention marked. Was given morphia, cracked ice and milk and lime-water. Had two good movements, and passed considerable gas with relief of all the symptoms. Later had some diarrhea, but otherwise made a good recovery. The wound healed by first intention; and December 15th, fourteen days after the operation, he was discharged well.

July 3, 1895. Reported. Has been perfectly well. No further attacks of pain. Has no tenderness. After walking much has soreness in scar. No evidence of hernia. Scar perfectly firm and solid.

Operation, Recovery.— J. M., twenty-three years of age, entered October 2, 1894. Four days ago she had a sudden, sharp and constant pain in upper abdomen. Constant vomiting of greenish material. No chill, but chilly sensations. Small dejection next morning. Is habitually constipated. During the next three days small movements obtained by enemata, but without relief to the pain. On the second day the pain went to the lower abdomen, and by the third day was localized in the right iliac fossa, where there was marked tenderness. No vomiting since first night. Now, pain and tenderness in right iliac fossa. The cheeks are flushed and the abdomen moderately distended. Skin in right iliac region mottled with red. Temperature on entrance 102.8°, pulse 120, respiration 30. In the right iliac fossa there is a distinct mass, dull on percussion and very tender. This mass extends well around into flank. Vaginal and rectal examination are negative. Prepared for immediate operation.

An incision, four inches long, was made through McBurney's point. The deep layer of the superficial fascia was found to be edematous. On opening the thickened peritoneum, a rounded, grayish mass presented, composed of inflammatory tissue. The general cavity was carefully walled off with sterilized gauze and a small incision was made into the fluctuating tumor. Foul gas and pus escaped and was quickly sponged away with small sterilized gauze sponges. The cavity was then freely opened and flushed with sterile water. In the wall was found the gangrenous appendix, which was removed, the base being tied with catgut ligature. The infected tissues were wiped with peroxide of hydrogen and with a weak solution of corrosive sublimate, they were then dried and packed with iodoform gauze. No sutures. Dry dressing and swathe. All ligatures of catgut.

During the night the rectal tube was used, with great relief to abdominal pain. The second day catamenia set in, and continued four days. The bowels were moved by enema on the third day; all gauze out next day. On seventeenth day slight pain (incipient phlebitis) in right thigh relieved by cotton wrapping.

Cultures taken from the interior of the appendix and grown upon gelatine showed a pure culture of the bacillus coli communis.

The wound granulated well, and on November 3d, one month after the operation, she was discharged well with a linear scar.

July 5, 1895. Does not spare herself at all except in lifting. No hernia. "In perfect health."

Operation, Recovery. — N. H., entered December 12, 1894, age nineteen, single. Two weeks ago, after an evening meal of cold corned beef and sweet cider (never indulged in before), she awoke with pain in belly — general. Vomited, but had no chills. Went to bed. (Bowels moved before she vomited.) Has grown steadily worse.

The abdominal muscles are rigid. A dull area, with corresponding cake, extends from median line near navel to right iliac fossa. Very tender here also. By rectum local tenderness, but no bulging. Rest of abdomen tympanitic. Temperature 101.8°, pulse 108, respiration 28. Facies not characteristic, but very pale. Immediate operation.

Incision below and outside of McBurney's point. Muscles edematous. Bowel walled back with gauze. Everything about cecum and appendix a mass of adhesions. Working down and inwards about four ounces of foul green pus were freed, and wiped away with gauze and corrosive. Appendix was not found. An iodoform wick was inserted and the wound dressed.

The subsequent history was that of a granulating wound. Myrrh wash was used as a dressing, and on January 17th, thirty-six days after entrance, she was discharged well, wearing an abdominal supporter.

July 10, 1895. In April had an attack of pain across abdomen; great tenderness above the scar. The pain was so severe that she could not move in bed. There was very frequent black vomiting for two days. The tenderness lasted for a month; still, on deep inspiration, slight pain in this place. Health at present fairly good.

Operation, Recovery.— M. G., forty years old, entered October 28, 1894. Six weeks ago, while pregnant, had intermittent pains in right iliac fossa, without vomiting or chills. Bowels regular. Child born three weeks ago. Nineteen days ago, two days after birth of child, had chills, abdominal pain (worse on right). No vomiting or other symptoms. Bowels regular. Next day pain localized in right iliac fossa, and since then has been sharp and intermittent. Nothing else now except pain and tenderness. On entrance her temperature was 101.5°, pulse 100, respiration 36. There was no abdominal distention, but dulness in the right iliac fossa, where a hard, movable mass could be felt. Tender on pressure. Vaginal examination negative. By rectum retroflexed uterus felt. She was prepared for operation, and three large dejections passed without relief to the symptoms. On the next morning, all symptoms having increased, the operation was performed.

On opening the abdominal cavity there were no signs of peritonitis. Behind and outside of cecum — retroperitoneally — was a large fluctuating mass, which, after gauze protective had been placed was cautiously incised through peritoneum, and pus allowed to flow out in small quantities at a time. A large amount of very foul pus was thus evacuated and the cavity flushed out with boiled water. No search was made for appendix, as it was incorporated in the abscess wall. The wound was packed with iodoform gauze and a dry dressing applied. After the operation a stimulant enema with salt solution, was given, as the operation had been attended with considerable hemorrhage. She made a good recovery from the ether and did well. November 1st, the wound was dressed, and found to be discharging a foul, chocolate-colored fluid. Syringed with styrone and repacked. November 3d, bowels moved freely. The further history is that of a granulating wound. A rather obstinate constipation was relieved by cathartics; and on the twenty-third of December, fifty-five days after the operation, she was discharged well, with a very small granulating wound, which had entirely healed by January 8, 1895.

July 2, 1895. Very well since discharge. Back a little weak. Slight bulging on right side, she thinks.

Perforation, Operation, Death. — J. C., aged thirty-nine, entered November 18, 1894. One year ago he had symptoms suggesting the passage of a calculus through the left ureter, but never passed any gravel.

Four days ago began to have dull pain radiating from median line of abdomen to right side. He worked the next day (Friday), but Saturday was obliged to go to bed, where he remained until brought here. Although he was somewhat nauseated Friday night and Saturday morning, there has been no vomiting and no chills. His bowels moved on Friday morning. He had considerable sharp pain incident to the jolting received in being brought to the hospital. His entrance temperature was 101° F., pulse 100, respiration 32. He did not appear very ill, and was considered a good case to watch. On the second day of his entrance to the hospital (the fifth of his illness) his temperature dropped and he took liquid nourishment well. The next day the temperature reached normal and he had no pain, although the abdomen was still somewhat rigid and there was slight tenderness in the right iliac fossa.

At 2.30 A. M., November 21st, he was reported for sharp pain relieved by the application of hot-water bottles and the internal administration of ginger. At 5 A. M. his pulse and temperature were rising, and he was in constant pain, mostly in the right side, with considerable perspiration. He became somewhat more comfortable later, but at 11.30 A. M. the operation was performed.

Free, thin, greenish pus was found in the abdominal cavity, and the intestines were covered with flakes of fibrin. The appendix was found perforated near the base, and a concretion was found lying free near it. The appendix was ligatured with silk and removed, the stump being hidden in flaps of peritoneum and buried in a fold of intestinal wall sutured over it. The abdomen was carefully wiped with sterilized gauze moistened with a weak solution of corrosive sublimate, a drainage-tube surrounded by iodoform gauze was pushed deep into the pelvis.

The patient failed steadily after the operation, although at 11 P. M. he became conscious and rational. At 2 A. M., November 22d, he became delirious, and at 6.53 A. M. he died.

RECURRENT APPENDICITIS.

There were three cases operated upon between the attacks. One of these is selected as an example of what may be done in the way of temporizing when it is desired not to operate during the attack. In one of the other cases the patient reports six months after the operation, "similar continual pain, though less severe than before the operation. No hernia." In a third case the appendix was found to be normal, and the discovery of a blue line on the gums shortly after the operation suggested lead poisoning as a possible source of the abdominal pain — The desirability of making a careful differential diagnosis before sending such a case to the hospital need hardly be emphasized. The operation "between the attacks" has in my private practice been followed by the most satisfactory results.

Removal of appendix, Recovery. — The patient, a waiter, twenty-three years old, entered the hospital October 18, 1894. Nearly two years ago he had a bad "colic," accompanied by constipation and vomiting. He was confined to bed for one day, and the next day resumed work. A year later a similar attack, but less severe, kept him in bed for two or three days. Since then he has had several attacks, with constantly diminishing intervals. Constipation with each attack, vomiting with first only. Last November was in hospital three days with attack, but refused operation. Chills only in that attack — last November. Each attack left a right iliac tenderness.

Two days ago, during night, had general abdominal pains, slight at first but gradually increasing until morphine was required. Pain persisted, and last night had vomiting and chills. One small dejection. Came here in ambulance because too weak to walk. Good development and nutrition; tongue coated; dull and stupid. No abdominal distention, no dulness, no cake. General tenderness. No spleen. Rectal examination negative. He was poulticed with sulphonaphthol, and in the next ten days became much better. Nearly all symptoms disappeared, and October 29th he was operated.

The abdomen was opened at McBurney's point, and an appendix showing very slight signs of inflammation was exposed. The appendix, which was long, small in diameter, and with very few adhesions, was removed. A silk ligature was placed about the stump, which was touched with the cautery. The cecum was sutured over stump from each side. The peritoneum was closed with continuous silk, and the external wound with silkworm gut.

On November 6th all sutures were removed. The wound healed by first intention. Uneventful recovery. Discharged well November 17th, nineteen days after operation.

Patient reported in June, 1895, that there have been no symptoms of the former trouble since the operation.

(*To be continued.*)

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SARCOMA OF THE CHOROID.

BY W. A. PARKER. M.D., SPRINGFIELD, MASS.

Mrs. H. W. P., of Holyoke, age thirty-two, came to me November 5, 1894, complaining of pain and loss of sight in the left eye. The vision had been gradually failing in this eye for a year till then, when she had only perception of light. In addition, she had had very often sensations of dazzling light, felt momentarily. A feeling of soreness, or "a bruised feeling," as she described it, had gradually developed, until it became very distressing, and forced her to apply for treatment. The pupil in the left eye was somewhat larger than that in the right; the anterior chamber was much shallower, and the tension of the left eyeball was perceptibly increased. R. V. = $\frac{20}{20}$; H., 0.50 D. L. V. = Perception of light.

Ophthalmoscopic examination showed a normal condition in the right eye; in the left, nothing but a detached retina could be seen.

The symptoms of detached retina produced in an eye not myopic and not injured by a blow, shallow anterior chamber, increased tension and pain pointed to the possible, if not probable, presence of an intra-ocular tumor; the patient was too young to have *primary* glaucoma. I advised enucleation. It seemed to me that, even if there were no tumor, it would hardly be a mistake to remove an eye which was hopelessly blind, and which was causing much suffering. The patient refused the operation, and went to the Manhatten Eye and Ear Hospital, New York, where the eye was removed by Dr. Webster.[1] I add the notes taken at this hospital in Dr. Webster's service.

DR. WEBSTER'S REPORT.

Phorometer. — Right, $\frac{1}{2}$ D., 105°, with the rule. Left, $1\frac{1}{4}$ D , 75°, with the rule. R. V. = $\frac{20}{20}$; Hm., 0.50 D. L. V. = Perception of light.

Ophthalmoscope. — Right, normal. Left, anterior chamber very shallow; a reflex from nasal side back of lens, as though from a sarcoma of the choroid and ciliary body. Has had a good deal of pain in both eyes. The pain, the bulging forward of the iris, and the red and immovable swelling on the nasal side of the fundus suggest a tumor. There is no history of tumor in the family. Enucleation advised.

I advised the patient to come to the Manhattan Eye and Ear Hospital for the enucleation, where I removed the eye, along with over a quarter of an inch of the optic nerve in order to include, if possible, any elements of the supposed tumor that might be following the nerve back into the cranium.

Diagnosis, January 23, 1895. — Detachment retina, tumor (?).

Treatment. Dr. Webster enucleated eye in usual way. Dressed and bandaged. There was very little injury to orbital structure. On 24th, bandage removed; *no* ecchymosis; cleansed and dressed with patch. On 25th, slight ecchymosis at inner canthus. On 27th, looks well; cleansing continued. On 30th, discharged. O. D. = $\frac{20}{20}$. O. S. = 0.

PATHOLOGIST'S REPORT.

Gross. — About the size of a child's eye; normal in appearance externally. On section an albuminous, viscid, brown fluid exuded from between choroid and retina. The retina was completely detached and formed a band in the centre expanding above into a fan-like process. A tumor was situated in the choroid on the lower and outer side of the interior of the eye, occupying about one-fifth of the interior.

Microscopically, a section of the tumor reveals spindle-cells of uniform size with oval vesicular nuclei running in irregular bundles, also a few scattered pigmented cells. Small vascular sinuses were scattered throughout the section containing blood globules and pigmented leucocytes. The fluid contains various-sized lymphoid cells, most of them pigmented, size about one two-hundredth to one three-hundredth of an inch. Diagnosis, spindle-cell sarcoma.

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[1] October 13th, the patient has been under my observation since she returned from New York, and till April 30th there had been no positive or suspicious signs of secondary growths, but since that time she has had at times severe and almost intolerable pain in the left side of the head. W. A. P.

Medical Progress.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

THE VERMIFORM APPENDIX.[1]

DR. R. J. A. BERRY, whose studies on the cecum have been noticed in a previous report, now discusses the appendix, in part from the results of one hundred observations of his own, in part from those of others. He finds that the average length, in his cases is 8.3 cm.; but taking it from the works of others also, he finds it 9.2 cm. He then considers the relation of the length to the age and sex, with results which do not strike us as very conclusive. In his one hundred cases the average male length is 8.6 cm.; and the average female 8.0 cm. Even if the series were larger, an average difference of 6 millimetres is hardly worth talking of. The main fact, however, is in accord with Bryant's views, who states that the male appendix is about 1 centimetre the longer; on the other hand Finnell says just the opposite. Berry finds the appendix longest between the ages of twenty and forty, but again the differences are not great, nor the series large. It is important to know that very long appendices may occur in children. Twice Berry measured an appendix of 13.3 cm. (his longest), and one of them occurred in a boy of five. He had but one case between ten and twenty years, and that measured 11.5 cm. He finds the average diameter 6 mm. at base and centre, and 5 mm. at apex. Bryant had, apparently, found the same. Dr. Berry measured the diameter in only 55 cases, of which 30 were males. The male average is 6 mm., the female 5 mm. The conclusions are satisfactory as to the relation of the appendix to the cecum. According to our author, "In over 90 per cent. of cases the appendix will be found arising from the postero-internal aspect of the cecum at a point 1.7 cm. below the lower border of the ileum just where that viscus enters the large gut."

The valve at the opening of the appendix is, in the opinion of Dr. Berry, with whom we incline to agree, an inconstant structure and of no importance whatever. He quotes Struthers as follows: "When the fundus of the cecum is full, or when the body lies on the back or on the left side, there is nothing to prevent semifluid cecal contents raising the valve and passing into the appendix." That the appendix is obliterated very frequently, especially late in life, is a doctrine which has spread of late years. Dr. Berry subscribes to it, stating that as the appendix is essentially a lymphoid apparatus and as lymphoid tissue atrophies at a certain time, this is what is to be expected. It is not quite clear, however, why an atrophy of the lymphoid tissue, through which the walls should become thinner, should lead to their agglutination. This appears to imply some additional process.

A PECULIAR CECUM AND APPENDIX, WITH REMARKS ON PERITONEAL POUCHES.[2]

Professor Fawcett observed a very small, pointed cecum, bent backwards behind the colon, so as to be hidden, from which a long appendix ran up behind the left layer of the ascending mesocolon, and bound by it to the whole length of the ascending colon. The appendix, separated by a slight constriction from the cecum, was three-quarters of an inch in width to near its upper extremity. (From its position and from a drawing it is clear that this means to near its blind end.) The three muscular bands extended a little more than half-way along the appendix.

This is certainly a very rare case, but it is on account of the remarks on the peritoneal pouches that we have included it in this report. There were no peritoneal pouches in this region, but a duodeno-jejunal one, large enough to receive the whole index. The author points out a very curious relation between the last mentioned pouch, and those about the cecum, namely, that the presence of one implies the absence of the other. He says, "In the last 200 subjects I have had under observation, I have always on opening the abdomen, looked at once for the cecal pouches, and am now able to predict with certainty the presence or absence of the jejunal pouch, and to form some opinion of its probable size." The clue should be sought in the history of development.

THE FORM AND RELATIONS OF THE SPLEEN AND KIDNEYS.[3]

Professor Cunningham has done good work in studying the shape and relations of abdominal organs by methods calculated to show them as they really are during life. Sometimes he has employed hardening injections, sometimes the process of reconstructing frozen sections. His results with the spleen differ considerably from the form which His's model has taught us to accept as the standard. This, in brief, gave us an organ pointed above and below, with a large, convex diaphragmatic surface, a concave gastric surface, and a concave renal one, the last two being separated by a strong ridge. Cunningham finds that the spleen is an irregular tetrahedon (a four-sided pyramid, one side being the base). The apex is above, pointing inwards. The phrenic surface corresponds, as Luschka showed, to the ninth, tenth, and eleventh ribs. The other three surfaces meet at what Cunningham terms the internal basal angle, from which start three ridges. One of these separate the renal surface, which, as a rule, is flat, from the concave gastric surface. The other two lines help to mark off the base, which he describes as "a very evident triangular area." This looks downward and inward. It is in relation to a varying extent with the tail of the pancreas, which may, or may not, make an impression on it. The rest of this surface is in relation to the colon.

The relations of the kidneys are much more complicated. In properly hardened ones many inequalities may be made out, but owing to the variations in the position of these organs, they are more uncertain. We do not care to discuss those made by the abdominal walls on the posterior surface, but merely mention that the impression of the last rib is often found, and sometimes also pits made by the ends of certain transverse processes. The front of the kidney has long been described as more convex than the back. It now appears that this is due to the remnants of what in life is a transverse ridge separating an upper and a lower oblique portion. In the left kidney the upper space is occupied internally by the suprarenal capsule, externally by the spleen, and between the two, in a very varying degree, by the stomach. The tail of the pancreas lies either on the ridge or just above it. The inferior field is occupied by the colon and, as a rule, by coils of the small intestine. The upper field of the right kidney is occupied by the liver and the lower by the colon. Professor Cunningham does not mention the suprarenal capsule, so we are not sure how much is on the anterior surface. The lower half is compressed by the colon. The duodenum also almost always rests against the kidney.

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[1] Anatomischer Anzeiger, Bd x, No. 24, 1895.

[2] Journal of Anatomy and Physiology, vol. xxix, July, 1895.

[3] Loc. cit.

It may be questioned whether Professor Cunningham's views are to be accepted in all details, for the range of individual variation is considerable, and the labor of making these preparations is so great that it will be long before an adequate number is collected.

Dr. F. Helm has studied the relation of the kidneys on rather more than one hundred subjects, nearly all adults, for his inaugural dissertation, of which an abstract is given in the *Anatomischer Anzeiger*.[4] Apparently the method employed was nothing more than simple inspection, which is very crude in comparison with Cunningham's. None the less his observations on the relations with the colon are very valuable. There is, we believe, little new in his observations on the position of the kidneys with relation to the vertebral column. He finds that the female kidney lies, on an average, half the thickness of a lumbar vertebra lower than the male, and that a remarkably low position is much more frequent in woman than in man. The following course of the ascending colon is found in the majority (56.7 per cent.) of the cases: on reaching the lower end of the right kidney the colon curls around it, apparently not crossing its anterior surface, and ascends along its inner side till it reaches the liver, where it makes the hepatic flexure. The termination of the transverse colon crosses the front of the left kidney near the top and then descends along its outer border.

Dr. Helm gives a number of diagrams of the relations he has observed. We are greatly surprised to find that the colon crosses even the lower end of the right kidney comparatively rarely, and we cannot but feel that we should like to have these results confirmed. The place of crossing the left kidney is very variable. The author figures some very curious twists of the gut in its neighborhood.

OS INTERMEDIUM ANTEBRACHII.[5]

By this name Dr. Thilenius describes a transitory cartilaginous element just above the wrist which is found in 65 per cent. of human embryos of the second month. It is then situated between radius, ulna, and the proximal row of carpal bones. The percentage drops to 50 per cent. in the third month and to 30 per cent. in the fourth. It has been observed but once in the adult and then as a bone. This element may disappear, leaving no trace, or it may be lost in the styloid process of the ulna. It apparently, however, may be fused with the fibro-cartilage or wander to the radius, near which it is usually found when it has a longer existence than usual. It is occasionally found in anthropoids and marsupials.

THE DEVELOPMENT AND SIGNIFICANCE OF THE SESAMOID BONES OF THE HUMAN HAND.[6]

The same author finds that these bones develop, without exception, from hyaline cartilage, and that they are laid down when the joints and muscles are still incapable of acting. Indeed they are more numerous in the embryo than in the adult. The process of development is the same in man and other mammals. The best developed sesamoid bones are found in the lower mammals; those of man and the anthropoids are to be looked on as rudiments. We would remark, however, that all the larger sesamoid bones seem to be distinctly functional.

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[4] Bd. xi, No. 4, September, 1895.

[5] Schwalbe's Morpholog. Arbeiten., Bd. v, Heft 1, 1895.

[6] Loc. cit., Bd. v, Heft 2, 1895.

Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

TWENTIETH ANNUAL MEETING, BALTIMORE, MAY 28, 29 AND 30, 1895.

(Continued from No. 19, p. 472.)

ABDOMINAL SECTION FOR PUERPERAL SEPTICEMIA.

DR. J. M. BALDY, of Philadelphia, in a paper on this subject, related a case in which, last February, he had opened the abdomen and removed the uterus, two or three weeks after labor, for septicemia, the patient recovering. Discussing the general subject, he said it could be stated at once that a large number of cases in which suppuration was absent could be excluded from the list suitable for abdominal section. Where pus existed, an operation was indicated, although it might be claimed that if the peritonitis were general it would prove useless. We could not say beforehand, however, that the pus accumulation was not limited. In acute cases, if anything was to be done, it would have to be the first or second week in order to hold out any promise whatever. It must be admitted that the field for hysterectomy in puerperal cases was not a large one. There had been nineteen operations in America with seven recoveries.

DR. FERNAND HENROTIN, of Chicago, thought it was proper in some cases to remove the uterus, and it should be done by the vagina, although there might be an advantage in some instances in opening the abdomen in order to judge more accurately of the condition present. Later he would read a paper in which he would try to show that early vaginal incision would in certain cases obviate the necessity for a more radical operation later.

DR. W. GILL WYLIE, of New York, would not undertake an operation, if the case were seen at all early, before trying his plan of frequently washing out the uterus after first curetting; for this procedure had saved some cases of puerperal sepsis in which others had supposed the infection had already extended beyond the interior of the uterus. This failing, he would not hesitate to operate.

DR. A. F. CURRIER, of New York, after defining the classes of cases, expressed the opinion that there was not much chance of saving the puerperal patient by operative procedure except in tardy cases of pelvic inflammation where the pus collection was distinctly limited, not diffuse.

DR. CHARLES P. NOBLE, of Philadelphia, would bring out sharply the fact that there was a difference between early and late cases. Cases of pus collection within the tubes or elsewhere found ten weeks after labor should be treated according to well-known surgical rules. There was little hope, however, of saving the woman by removing the uterus for sepsis a week after labor.

DR. H. C. COE, of New York, related a case which he thought presented the conditions usually spoken of as favorable for success, he opened the abdomen, removed the diseased adnexa, left the uterus, as he did not wish to add the shock of hysterectomy; but the patient died. The case had been a very discouraging one, and he must agree with those who had characterized abdominal section for puerperal septicemia as purely experimental.

DR. A. LAPTHORNE SMITH, of Montreal, had observed pouring out of septic material from the divided small vessels in operations for puerperal sepsis, and suggested, as a preventive, that the parts be walled off. The uterus should be straightened and the canal kept free in order that pus should not be retained as in a pocket.

THE PRESIDENT'S ADDRESS.

DR. MATTHEW D. MANN, of Buffalo, chose for the general subject of his address

THE RELATIONS OF LITHEMIA TO DISEASES OF THE PELVIC ORGANS IN WOMEN.

He hoped to throw some light upon the origin of certain rather obscure diseases of the pelvic organs in which the pelvic trouble was secondary to certain general conditions. The alimentary and genital organs required particular consideration in this connection.

The class of symptoms complained of varied, but they related to menstrual disturbances, vaginal discharge, backaches, frontaches, troubles of bladder and rectum, insomnia, dyspepsia, dry skin, depression of spirits; and above all, the patients were nervous. Physical examination might show no lesion of the pelvic organs. The urine, however, was almost always below normal in quantity, was acid, and usually contained an excess of uric acid, yet the specific gravity was seldom high, thus showing a deficiency in solid excreta. In other words, there was renal insufficiency, and this was regarded by the President as of the utmost importance in its relation to pelvic diseases. We might differ as to the toxic principle of urine, but that the fluid as a whole was toxic was a certainty. The amount passed daily by a man was estimated to contain sufficient poison to kill him.

It was also important to examine the blood. Herter had shown that in neurasthenics, without apparent anemia, the hemoglobin was decidedly reduced. The President had been unable to find a better term to apply to the condition of these patients than that of lithemia, which he said might be defined as follows: A distinct disturbance of nutrition of a certain type in which there were peculiar tendencies, one of these tendencies being the output of an excessive amount of uric acid. As this disturbance of nutrition inclined to continue and to recur, we might properly apply to it the term diathesis, and hence the term uric-acid diathesis.

Such cases could not be treated simply as ovarian or uterine, although the condition of these organs might be such as to require direct interference. Wherever the trouble started, whether in the stomach, intestines or nervous system, it might lead to disturbance of the circulation, causing congestion in the uterus, this leading to catarrh, this again to purulent inflammation. Imperfect metabolism of the food products resulted in poisonous substances forming in the system; and owing to imperfect action of the skin, kidneys and other excretory organs, they went on accumulating, producing and intensifying morbid conditions.

Particular attention was also called to the influence of the urine in renal insufficiency in producing bladder symptoms. We could not yet say just what was the irritating property of the urine, but he had found by experience that to render it neutral by alkalies overcame to a certain extent the irritative properties. Constipation was a common condition in these woman, and might be accounted for by disturbance of the portal circulation, as well as by backward displacement of the uterus, and other conditions. The original starting-point might have been in the pelvic organs themselves, as in a laceration of the cervix. Special causes could be found on every hand — in climate, diet, dress, etc. Tight lacing was not the only source of mischief, but snug-fitting dresses were also capable of producing displacement of both uterus and all the abdominal viscera. The stomach and large intestine especially were often found displaced. Comparative observation had shown that these displacements were much more common in women than men. More recent observations had shown that respiration was performed the same in women as in men. The present mode of dress among civilized nations, changing as it did so important a function as respiration, must have a marked influence on the contents of the abdominal cavity. If one doubted the prevalence of waist constriction, let him apply the following test: put a tape measure around the waist outside of the clothing and note the difference between forcible expiration and inspiration. More than one-half of the women would be found to show no change at all, about one-third would move the tape one-fourth of an inch, while one in twenty-five perhaps would move it nearly an inch. Men could easily move it two or three inches. A campaign of education was sorely needed in the matter of dress reform for women.

RENAL INSUFFICIENCY IN GYNECOLOGICAL CASES.

DR. JAMES H. ETHERIDGE, of Chicago, in some introductory remarks to a paper on this subject, expressed the opinion that there was likely to be a reaction against the furor for operative gynecology. In connection with a dispensary his attention had been struck by the number of gynecological patients who complained of general symptoms. Out of a hundred of these he had taken up the symptoms relating to the kidneys alone, where there was no proof that these organs were organically affected. He had found that a great many gynecological patients suffered from renal insufficiency, and that diuretics would relieve them of many symptoms referred to the pelvis. In judging of the existence of renal insufficiency, one should take into consideration the total quantity of solids, as well as of the fluid and solids. The two extremes of the amount of solids passed in the twenty-four hours were 500 and 1,100 grains, according to the weight of the individual. When the amount of solids passed did not exceed 400 grains, the person might show only some nervousness; but when the amount fell to 300 grains, the nervousness became more serious, and on taking cold a bronchitis or a pleurisy was liable to develop. If the amount fell to 200 grains, the condition was very serious; and if to

100 grains, the patient could be regarded as dangerously near uremic convulsions. If in such a case the amount of urine and its solids were increased by appropriate diuretics, the nervousness and other symptoms would be found to ameliorate or disappear.

The author said his object in writing the paper had been to call attention to the frequency of renal insufficiency in gynecological patients, and to the necessity for overcoming this as a means of overcoming symptoms and of prophylaxis.

Dr. A. J. C. Skene, of Brooklyn, recognized in the President's address and Dr. Etheridge's paper two very valuable communications. He could corroborate the facts stated from his own observation, and appreciated the value of the suggestions made in reference to prophylaxis by paying attention to the urine and digestive tract.

Dr. Howard A. Kelly gave an analysis of the urine in 21 cases, supplementary to that in 100 cases previously published, showing that this secretion was always diminished after operations, usually down to about 500 c.c., while the average normal amount was about 1,200 c.c. This increased after the operation took place gradually until about the tenth day, when it again reached the normal. A knowledge of the fact that the urinary secretion was always diminished after operations would relieve one of anxiety as to the condition of the kidney, obstruction of the ureter, etc.

Dr. Ford, of Utica, thought the variable urinary flow in neurasthenics was often emotional, and seen in sensitive, nervous men as well as women.

Dr. Baldy, of Philadelphia, thought the pelvic condition was the causative factor rather than the resultant of renal insufficiency.

Dr. W. Gill Wylie, of New York, spoke of the value of hot saline solutions in the rectum during and after operations in preventing shock, increasing the quantity of urine, relieving thirst, etc.

Dr. Bache Emmet, of New York, impressed the need of preparing patients two or more weeks for operations, relieving renal insufficiency, etc.

Dr. Lapthorne Smith, of Montreal, had his patients drink freely of water after operations, and said his own nervousness was thus overcome, the explanation being that he lost much fluid during the operative work through perspiration. There was no diuretic equal to water, and no better means of washing the uric acid out of the muscles and joints in painful rheumatic and lithemic affections.

INDICATIONS FOR TOTAL CASTRATION BY THE VAGINA.

Dr. Charles Jacobs, of Brussels, occupied a seat on the platform while his paper was being read by Dr. Henrotin.

Total castration by the vagina, he said, is indicated (1) in uterine cancer at the beginning, (2) in the uterine fibroid, (3) in extra-uterine pregnancy and tubal abortion, (4) in total genital prolapse. It becomes the choicest operation in bilateral, purulent or non-purulent diseases of the appendages. It finds its indications in uterine and in chronic incurable diseases of the uterus and its appendages. Total vaginal castration is not a more dangerous operation than laparotomy.

Dr. Jacobs had performed total vaginal castration since 1889, 403 times, with 391 operative cures and 12 deaths, or a mortality-rate of 2.9 per cent. For uterine cancer, 45 cases, 1 death; 5 patients without return over four years; uterine fibroids, 38 times; 23 simple hysterectomies with 23 cures; 15 hysterectomies by morcellation, with 13 cures and 2 deaths; extra-uterine pregnancy, 3 cases, 3 cures; total genital prolapse, 19 cases, 18 cures and 1 death; inflammatory diseases of the appendages, 272 cases, 6 deaths — 142 of them pyosalpinx, 15 of abscess of the ovary, 33 of hematosalpinx, 18 of chronic ovaro-salpingitis.

Among accidents he mentioned fistulæ, 9 times in the 403 operations. One of these patients died after intestinal anastomosis with Murphy's button. In a case of vesical fistula nephrectomy was finally done successfully. He had lost no case from hemorrhage.

Vaginal castration has been criticised because it might leave suppurative pockets within the abdomen. There certainly were cases of suppuration where fusion of pockets with neighboring organs was such as to make complete ablation impossible. In 157 cases of serious suppuration he had left 21 times parts of the appendages in the pelvis, but he had never been obliged to have recourse to supplementary operation by reason of tardy complications. Besides did this not also happen in laparotomy? It was at least remarkable that it was precisely in these serious cases that vaginal castration had given its greatest successes, and which had gained to it very convinced laparotomists, such as Pozzi, Terrier, Sänger and others.

The paper gave the following unpublished recent statistics of total vaginal castration: Landau, 141 cases, 2 deaths; Leopold, 44 cases, 1 death; Sänger, 17 cases, 2 deaths; Péan, 450 cases, 12 deaths; Richelot, 219 cases, 11 deaths; Doyen, 253 cases, 18 deaths; Ségond, 200 cases, 14 deaths; Gallet, 29 cases, 2 deaths; Jacobs, 403 cases, 12 deaths. Total, 1,756 cases, 74 deaths, or 4.2 per cent. mortality.

The discussion on Dr. Jacobs's paper took place in connection with that on the following papers on related topics.

VAGINAL HYSTERECTOMY FOR UTERINE MYOMATA AND DISEASES OF THE ADNEXA.

Dr. William H. Wathen, of Louisville, read recent statistics sent him by Péan and other operators of their vaginal work, and gave the following as some of the reasons why the vaginal route should be chosen: (1) there was more rapid and complete convalescence, the patient usually sitting up within a week and walking about a few days later; (2) in pelvic suppuration there was less danger of infection from soiling the peritoneum; (3) absence of mural abscess; (4) absence of subsequent hernia; (5) restoration to health in a greater proportion of cases. The preliminary preparation for vaginal hysterectomy and celiotomy was practically the same. The vagina should be made as aseptic as the abdomen.

CONSERVATIVE SURGICAL TREATMENT OF PARA- AND PERI-UTERINE SEPTIC DISEASES.

Dr. Fernand Henrotin, of Chicago, read this paper. He said women came to us to be cured of their symptoms — of the vaginal flow, pains, etc.; that to them a pathological cure was of minor importance. The professor and hospital surgeon sent them home after two weeks, cured of an operation, but often not of the disease. It was the author of one laparotomy who always knew the remote as well as the immediate result. Salpingectomy and salpingo-oöphorectomy had often failed to cure the patient with peri- and parauterine septic disease, and of recent years it had become the practice also to remove the uterus. Having laid hands upon the ovaries, it did not matter what became of the uterus. The time, however, for showing sentiment was before the ovaries had been touched. Women with pyosalpinx, oöphoritis, pelvic abscess, etc., whether of catarrhal, puerperal, or gonorrheal variety, did sometimes recover completely without radical operation. The gynecologist of the future, if he had a conscience, must learn to carefully discriminate between cases. This whole subject would have to be gone over again by some master who had pathological knowledge combined with experience.

The author wished to direct attention to the management of the class of cases under discussion in their incipiency. This would usually fall upon the general practitioner, since he alone usually saw the case in the first stage. The time to cure septic inflammatory diseases completely and perfectly was within the first week of their appearance. The treatment which Dr. Henrotin recommended and had practised in the limited number of cases which he had seen the past two or three years, was to make an incision behind the uterus and explore the pelvis. The vaginal incision carried with it little if any danger. He had operated on 27 cases, and all had made a satisfactory and apparently permanent recovery. Just as soon as there was evidence that the disease could not be reached from the interior of the uterus, make an incision behind, and one would have a good chance to abort the disease before it had gotten beyond control. What was the present practice? We gave a douche, put on a poultice, quieted pain with morphine, and allowed the case to go on. In contradistinction to such a hopeless policy, the author recommended vaginal incision, posterior to the cervix, parallel with the axis of the vagina and downward, introduction of the finger. If nothing but an exudate was found, the patient would get well in a few days, with freely movable pelvic organs. He urged, then, cure of the disease in the beginning by simple incision and drainage.

(To be continued.)

Recent Literature.

A Treatise on the Nervous Diseases of Childhood, for Physicians and Students. By B. Sachs, M.D., Professor of Mental and Nervous Diseases in the New York Polyclinic, etc. 8vo, pp. xviii, 666. With one plate and 162 illustrations. New York: William Wood & Co. 1895.

In spite of the importance of a thorough knowledge of the nervous diseases of childhood, special works in English upon this subject have been distinctly rare, and the consideration of it in the ordinary text-books of pediatrics has been far from satisfactory. A work, therefore, of even average merit would be desirable, so that it is with especial pleasure that we welcome the present volume, which is one of the ablest contributions that has been made to American neurological literature. Those who know Dr. Sachs's work, and especially how much he has done to place our knowledge of the cerebral infantile palsies and muscular dystrophy upon a sound basis, have awaited the book with keen anticipation; but the performance has bettered the anticipation. After a careful reading of the book the strongest impression which it makes is not the author's wide knowledge of the literature, nor the richness of his own personal experience, nor his great clearness and power of condensation — in all of which, be it said, he excels — but his sound judgment and the eminently practical and sensible character of his teachings.

The clearness and condensation of the work are well manifested in the introductory chapter, where, in less than fifty pages, the methods of examination are treated in a most admirable manner. This chapter should be studied by every physician as a model not only for the examination of children but also of adults. The tables which show the action and innervation of the different muscles, the symptoms of their deficient action, and the diseases in which they are commonly involved are especially to be commended. In the discussion of the various diseases the author has "thought best to include all those diseases which either occur frequently during early life, or which, when occurring at this period, have some distinctive features." He has very wisely departed from the usual custom and discussed the functional affections first, on account of their importance and frequency, and also because of their bearing upon the entire life of the child and their close relation to many organic diseases of the nervous system.

In the chapter on epilepsy he states that "idiopathic" epilepsy is rare, and that in many cases there has been some injury to the brain, or the epilepsy is due to some cerebral disease in early life, which may have caused a transitory palsy, long since forgotten, but still manifesting itself, perhaps, only by an increase of the reflexes on the once paralyzed side. We are glad to note that he scouts the idea that ocular disturbances may cause epilepsy and that he condemns surgical treatment of the eye muscles as a cure for epilepsy. He is not an enthusiast for the surgical treatment of epilepsy. He has failed to find a single absolute cure from operation in his own cases, yet he urges that injured tissue be removed at the earliest possible moment, even before the actual development of epilepsy.

In the chapter on headache he protests with much wisdom against the too-prevalent view that the slightest error in refraction must be the cause of all ills, and thinks that eye-strain has been made too prominent as a cause of headache. "The cases that are due to eye-strain are those in which the headaches come on after reading, or in studying." He holds that Seguin's views as to the dependence of migraine on eye-strain are fallacious, that in many cases the eyes are normal, and, when there is an error, the migraine is often not relieved by glasses. Such a protest against a reigning medical opinion is characteristic of the sound and conservative judgment of the author. In the chapter on chorea, while recognizing the possibility that chorea may be of infectious origin, he admits our ignorance of its nature, and the lack of evidence as to its infectious character. In all the functional affections he lays great stress in treatment upon the rest-cure.

The sections on diseases of the brain and cord are introduced by brief but admirable chapters summing up our present knowledge of the anatomy and physiology, chapters which are models of clearness and conciseness. Within a few years several rare affections of the spinal cord have been differentiated, and this is the first treatise which has given a full classification of these affections. This portion of the book will therefore be especially welcome to the neurologist, for in it he will find an able and critical summing up of our present knowledge on the subject, with much in the way of elucidation of some of the more obscure points of differentiation between the hereditary spastic conditions based upon the author's own rich experience. It is, however, a difficult task to select any one chapter for special praise where all are so good. The chapters on spinal syphilis and the muscular atrophies are of especial interest. In the section on diseases of the brain, the chapter on the infantile cerebral palsies may perhaps first attract attention, as might be expected from the author's previous work on the subject. In the limits of a review we cannot discuss these chapters in detail, and we can only praise them. The final section on insanity is the poorest in the book, because it is too short. So little has been written in English upon the mental affections of childhood, that we wish that the author had gone more into detail, even at the risk of adding another hundred pages to the volume, and we hope that in the next edition he may enlarge this section.

We cannot dismiss the work, however, without a special commendation of the paragraphs devoted to treatment. They are very full, the treatment is given in detail, and is of the most practical character, and, even in the hopeless affections, the author is not a therapeutic nihilist, but he brings forward many valuable methods for relieving the patient's condition. We congratulate the author on the work, and we commend it heartily to the profession as a most admirable treatise on a very important and too much neglected subject.

Pathology and Treatment of Diseases of the Skin. For Practitioners and Students. By DR. MORIZ KAPOSI, Professor of Dermatology and Syphilis, and Chief of the Clinic and Division for Skin Diseases in the Vienna University. Translation of the last German edition. New York: William Wood & Co.

Kaposi's text-book on diseases of the skin arranged in the form of lectures to his classes, has long been one of the standard books of reference in dermatology. The large work on this subject written by Hebra and Kaposi was translated many years ago under the auspices of the Sydenham Society, and has served a most useful purpose in bringing the views of the Vienna school, at that time the centre of dermatological activity, within reach of those not proficient in the German language. The present volume is a translation of the fourth edition of Kaposi's lectures, by Dr. James C. Johnston, with a preface by Dr. George H. Fox of New York.

An extended comment on Kaposi's book, so well known to all who have any interest in dermatology, is not required here. It may be said briefly that the book in its several editions has always shown marked excellencies, prominent among them being the vivid way in which clinical appearances are described, and this power of description has been a marked characteristic of the author in all his writing. The last edition of the work is much more comprehensive than the previous ones, and most of the advances that have been made of late years have received due recognition. The writer's almost isolated position in refusing to recognize the tuberculous nature of lupus, detracts much from the value of the chapters that deal with this affection. The edition that has appeared in Paris, translated into French and annotated by Besnier and Doyen is a far more valuable possession for the dermatologist or advanced student, in our opinion, than the original, and an English translation of this would have been more serviceable. The notes, chiefly by Besnier, fill up the voids that are left in Kaposi's book, and while detracting nothing from the admirable clinical descriptions they add the experience and criticism of the French school, which has of late years in the opinion of many, equalled or surpassed the Vienna school in its contributions to dermatology.

The translation is good, as a rule, although errors could be easily pointed out. The illustrations, which are mostly of microscopical preparations of sections of skin, vary much in merit. Many of those that have been inserted recently are of much excellence; on the other hand, there are many older illustrations still remaining that are distinctly inferior to the work that has been done of late years in depicting the histological appearances as revealed by modern methods.

The Medical News Visiting List for 1896. Weekly (dated, for 30 patients); monthly (undated, for 120 patients per mouth); perpetual (undated, for 30 patients weekly per year); and perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 160 pages of blanks. The 60-patient perpetual consists of 256 pages of blanks. Each style is one wallet-shaped book, with pocket, pencil and rubber. Philadelphia: Lea Brothers & Co. 1895.

"The Medical News Visiting List" for 1896 has been thoroughly revised and brought up to date. The text portion (32 pages) contains the most useful data for the physician and surgeon, including an alphabetical Table of Diseases, with the most approved Remedies, and a Table of Doses. It also contains sections on Examination of Urine, Artificial Respiration, Incompatibles, Poisons and Antidotes, Diagnostic Table of Eruptive Fevers, and the Ligation of Arteries. The classified blanks (160 pages) are arranged to hold records of all kinds of professional work, with memoranda and accounts.

This is one of the best of the visiting lists issued, and will be found useful by the busy practitioner, whether in town or country.

A Manual of Organic Materia Medica. Being a Guide to Materia Medica of the Vegetable and Animal Kingdoms. For the use of students, druggists, pharmacists and physicians. By JOHN M. MAISCH, Phar.D., Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. New (sixth) edition, thoroughly revised by H. C. C. MAISCH, Ph.G. Philadelphia: Lea Brothers & Co. 1895.

This work ever since its appearance, thirteen years ago, has maintained its reputation as being the best hand-book upon pharmacognosy of any published in this country. This revision, by the son of the author, in one very handsome 12mo volume of 509 pages with 285 engravings, brings the work up to date and is in accord with its previous high standard. B. F. D.

DR. HARRISON ALLEN has been elected Emeritus Professor of Comparative Anatomy in the University of Pennsylvania.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, NOVEMBER 14, 1895.

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THE SYMBOL OF MEDICINE.

RECENTLY published remarks concerning a distinguishing device for the Medical Department of the Army bring to mind the whole subject of medical symbolism, in both its civil and military application. After extended research among the histories and other records of ancient and modern times, together with observation of customs yet extant among socio-religious communities, a form has been found which appears to answer the requirements necessary to appropriate insignia by which to characterize medicine.

It is well known, to those informed in such matters, that the caduceus — the emblematic staff and serpents — also serpents in different postures and variously associated with other objects, and the cross in its many forms and combinations, are outgrowths of one and the same root.[1] Moreover, the Geneva cross, of the Red Cross Society, is now recognized, the world over, as indicative of medicine in its best practical application. We have here, therefore, a proper symbol of the healing art, fitting in its origin, significance, and actual use by civilized humanity. The ordinary design might be improved upon by lengthening, very slightly, the arms of the cross; so that the square forming the centre would be a trifle smaller than the corresponding part of the actual Geneva cross. This variation is recommended for the reason that in the common form of "red cross," the great mass of color in and about the centre causes an apparent lack of proportion, by making the middle square look larger than it really is. This optical illusion would be corrected by the suggested modification.

For use on military uniforms, the cross might be of some handsome shade of red, made of durable material set in gold.[2] If the red cross is used as a medical emblem, it should be recognized that it is of international significance, and a red cross with gold about the edges is ornate and might serve for a collar device to designate a medical officer. The red cross is an emblem of neutrality and should be easily distinguishable at a distance, and thus protect those who by the treaty of Geneva are classed as non-combatants, though it is probable that, with the present long-range fire-arms, non-combatants, whether medical officers or newspaper correspondents, will have to take the common chances.

It appears that the question of proper insignia has been under consideration by the Medical Department of the Army; when adopted, such insignia will probably be accepted by the militia of the different States.

In this connection, attention is naturally drawn to the fact of the insecure tenure in office, as regards medical officers in the militia. Persons of intelligence know how great is the preparation necessary to properly qualify for the duties of surgeon. In order to have good men enter the service, the position should be made permanent — not dependent upon the choice of one man, however able and honest.

Continuance in office could be made contingent upon proper moral conduct, and duty well done.

The emblem herein described appears to be significant, appropriate, easily recognizable, pleasing to the eye, and suitable for use wherever a symbol for medicine may properly appear — whether in art, literature, or other relation of life.

◆

THE LUNGS OF ONE OF KOCH'S EARLIEST TUBERCULIN PATIENTS.

THE appearances found at the autopsy of a Finnish patient who was one of the first to undergo tuberculin treatment at the hands of Professor Koch, in Berlin, are reported by Adami, in the *Montreal Medical Journal* for September, 1895.

The patient was a highly intelligent man, thirty-three years old, who was treated by Professor Koch at the Victoria Hospital in Berlin for fifty-two weeks, in 1890. He had been suffering from hemoptysis, night-sweats and progressive emaciation. Marked improvement took place under the treatment; he returned to Finland; and his health was apparently restored. In June, 1893, he came to Canada, where he was employed as a skilled mechanic in the engineering laboratory of McGill University, and remained apparently in perfect health until January of the present year, when his cough, night-sweats, etc., returned. He was seized with severe and recurrent hemorrhages, from the effects of which he died on April 18th. At the autopsy firm adhesions were found at both apices, with extensive fibroid changes, together with well encapsulated caseous masses and small contracted cavities with dense envelopes. These changes were undoubtedly signs of the arrest of a fairly extensive tuberculous process which was coincident with the treatment by tuberculin in 1890 or 1891. That the process had only been arrested, and not cured, was evident by the lesions, which were distributed through the remainder of the lungs, which consisted of rather large miliary tubercles, broncho-pneumonic in their distribution, together with a large cavity in the walls of which was found the eroded artery which had been the source of the hemorrhage. The fact that the recent tubercles were most numerous in the vicinity of the old disturbance makes it almost certain that the second attack of tuberculosis was not a second fresh infection, but a lighting-up of the trouble in one of the old foci, spread by dissemination through the air-passages.

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[1] Numerous other things, more or less used as symbols of medicine; such as the oak, palm, gallus, *et alia*, have the same origin.

[2] See article on "Medical Symbolism" in this Journal, vol. cxxvi, No. 16, page 380, October 20, 1892.

The interesting point about the case is the fact that a tuberculous process as extensive as was indicated by caseation, tubercular pleurisy, and the formation of five or six cavities at the apices had been arrested for four years by a year's treatment in the Berlin Hospital.

MEDICAL NOTES.

The Alvarenga Prize of the College of Physicians of Philadelphia for 1895 has been awarded to Dr. Guy Hinsdale, of Philadelphia, for an essay on "Syringomyelia."

Professor Von Bardeleben's Successor. — Professor Köuig of Göttingen has been chosen to fill the post of the late Professor Bardeleben, Professor of Surgery at Berlin.

Small-Pox in London.—According to the latest report of the Metropolitan Asylums Board, there were 124 cases of small-pox under treatment at the various hospitals in London at the time it was issued.

The Return of Influenza.—It is reported that influenza, which has lately appeared again in London and vicinity, is on the decline, and that the mortality in that city from diseases of the respiratory organs is considerably below the average.

Increase of Diphtheria in London.—It is a fact worthy of note that during the early weeks of October there was a marked increase, not only of the number of cases of diphtheria in London, but also in the mortality. The mortality during the week ending October 19th was 76, which is nearly double the average for the corresponding week of the ten preceding years. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospitals on October 19th was 667. The reason for the high mortality which is directly at variance with the experience of other large cities where the antitoxin treatment is extensively carried out, is difficult to surmise. It is an interesting question whether it might be due to a deterioration in the quality of the antitoxin furnished the hospitals of the Asylums Board. The difficulty of maintaining antitoxin at a given strength is well known, and the fact that in order to have a supply of the agent in a sufficiently active condition on hand it is necessary to constantly test the product and perhaps resort to fresh inoculations with the toxine. All the conditions entering into the production of the antitoxin are so variable, that a product of perfectly uniform strength is manifestly difficult to attain.

The William F. Jenks Memorial Prize of the College of Physicians of Philadelphia for 1895 has been awarded to Dr. Abram Brothers, of New York, for an essay on "Infant-Mortality during Labor, and its Prevention."

Splenectomy for Injury. — It is stated in the *Lancet* that: "There have been recently three successful cases of excision of the spleen for injury at St. Thomas's Hospital. As these are, we believe, the first successful cases that have occurred in Great Britain the profession will look forward with interest to learning the details."

Liquid Air for Commercial Purposes. — It is reported that the manufacture of liquid air on a large scale for commercial purposes has recently been begun in Germany. The intense cold required for its production is secured by the evaporation of the product itself. The process is thought likely to become of commercial importance for the reason that during the process of liquifaction the air becomes richer in oxygen, until a gas is obtained which contains 70 per cent. The oxygen may be further purified from nitrogen, of which, it is said the gasinous balance chiefly consists.

NEW ENGLAND.

Acute Infectious Diseases in Boston. — During week ending at noon, November 13, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 157, scarlet fever 31, measles 6, typhoid fever 35.

University of Vermont, Medical Department. — There are at present 183 students in the Medical Department of the University of Vermont. A class of 45 was graduated this year.

The Danger from Electric-Light Wires. — A recent death which occurred in Lynn from grasping a live wire, and the still more recent case of the painter who was killed by the current from an electric-light wire at the Boston greenhouses in Dorchester, emphasize anew the danger to artisans employed in buildings, to the roofs or walls of which such wires are attached. In the Dorchester case the connection is said to have been made by the man's grasping the live wire with one hand and the iron pole which supported it with the other. It is too often the case with linemen and others whose duties make it necessary to handle live wires and electrical apparatus, that familiarity breeds contempt, and fatal carelessness results, although their very knowledge of the agents with which they have to deal should render them constantly watchful. The case of the painter who was killed in Dorchester is an example of the necessity of thoroughly instructing all those whose work brings them into close relations with live wires, of the enormous danger to which they are subjected, and of the precautions they must take.

Yale University, Medical Department.—The editors of the *Yale Medical Journal* for November, 1895, (this issue, by the way, begins the second volume of that excellent publication,) point with pride to the fact that during the last five years the number of students at the Yale Medical School has doubled, increasing from 65 in 1890 to 130 in 1895. "Many changes, of great moment to the student, have also been made in the curriculum in anticipation of the four years' course which next year will be required of students who expect to graduate from this school. The newly arranged department of practical midwifery, and other changes, cannot but help to greatly increase the clinical advantages to the student." The following men received full professorship at the meeting of the corporation last June: Prof. O. T. Osborne, Prof. F. B. Ferris and Prof. G. Lusk. Drs. L. S. De Forest and H. L. Swain were made clinical professors.

NEW YORK.

Should School Recess be Lengthened?— The question has been considerably agitated of late, whether the noon recess of the public school children should not be extended and the schools dismissed at a later hour in the afternoon.. It was claimed by those advocating the change that the present recess was not long enough to enable the children to go to their homes, where they could get warm luncheons, and that in consequence grave stomachic troubles were caused. At the last meeting of the Board of Education it was decided that the present hours should be continued, and the report of the Committee on By-laws, to which the matter had been referred for consideration, was adopted. The report stated that the members of the committee, after personal investigation, had arrived at the conclusion that the health of the school children had not been impaired by reason of the fact that they were given only one hour between the morning and afternoon sessions, during which they had their mid-day meal. The few cases of dyspepsia discovered among the children appeared to have been caused by the character of the meals which they ate. "Were it not for the great number of candy, cake and pie shops near the schools," the report runs on to say, "and the inability of the children to resist these allurements, stomachic disorders among them would be few and far between." The committee further reported that more than 75 per cent. of the parents were opposed to lengthening the noon recess and extending the hour of afternoon dismissal.

Typhoid at Watertown, N. Y.—In the city of Watertown, N. Y., there were some fifty cases of typhoid fever, and as one-half of these occurred in families served with milk by one vender, the latter has been ordered to discontinue the delivery of milk pending a thorough investigation of the facts of the case by the local health board acting in co-operation with the State Board of Health.

Increase in the Mortality from Diphtheria. — The mortality from diphtheria has increased somewhat of late, and during the week ending November 9th there were 41 deaths from the disease. Pneumonia also shows a slight increase, the number of deaths from it amounting to 117; which is 27 more than were caused by phthisis. The general mortality in the city, however, is small. During the week 721 deaths were reported; which is 38 less than the average for the corresponding weeks of the past five years.

Death of Dr. Pemberton. — Dr. John P. Pemberton, sixty-three years of age, died suddenly of apoplexy on November 9th at Long Branch, New Jersey, where he had practised for forty years.

Miscellany.

MEDICINE AND SURGERY AMONG THE AUSTRALIAN ABORIGINES.

The Australian aborigines seem to be undergoing the fate of all savage peoples who come in contact with the fringes of civilization.

J. Steele Robertson, Secretary of the Medical School, University of Melbourne, Australia, in an article on this subject,[1] maintains that until the arrival of the white men in Australia the natives were a decidedly healthy people; but ever since the first shipload of white settlers landed, in 1788, their health has deteriorated very much and their numbers have rapidly decreased. The diseases for the introduction of which the white settlers are responsible, according to Dr. Robertson, are small-pox, syphilis and intemperance, together with their various resulting evils, and probably also scarlet fever and measles.

The savage attacks of the settlers, aided by native police taken from a tribe hostile to the one which they are endeavoring to exterminate, are vividly described by the writer. After most of the young men of a tribe have been butchered by the settlers and native police, aided of course by modern arms and equipment, the women are captured and allowed to "come in" to the settlers' homestead, the report being sent to headquarters that the tribe has been dispersed. In the end, syphilis finishes what the rifle began. "To what an extent this has happened may perhaps be realized when it is stated that the last Tasmanian died in 1876, and that in Victoria the few natives still remaining are at the government aboriginal stations, while the 'dispersal' process is still going on in other Australian colonies."

The diseases which prove most fatal to the blacks are those which are enumerated above as having been introduced by the white settlers; and the wearing of clothes during the day (they are said to always take them off at night) has caused a great extension of chest diseases and tuberculosis.

"Proximity to the towns leads to intemperance, and intercourse with the whites to venereal diseases. Farm or town life often brings on nostalgia or home-sickness, which causes the patient to mope, and if, while in this state, he catches even a slight cold, lung-disease develops and death follows. Leprosy, again, has been introduced by the Chinese, Japanese, Malays, Afghans, and other Asiatic races, and also by the South Sea Islanders on the Sugar plantations."

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[1] International Medical Magazine, October, 1895.

The spread of syphilis is ascribed partly to the lust of the white convicts and the scarcity of white women in the bush and to a curious superstition among the natives that a woman who has once borne a child to a white man will thereafter bear exceptionally strong and healthy black babies. The custom of exchanging wives, of handing over a wife, when going on a journey, to an unmarried male friend, and of providing visitors with female bedfellows, may also have a good deal to do with the spread of syphilis.

The Australian aborigines are firm believers in their native doctors, who are arrant frauds, and whose chief stock in trade consists of dances, legerdemain and incantations. The strangest thing about the business is that a doctor, although knowing well the fraudulent nature of the whole proceeding, will, when ill, call in another doctor to practise upon him, a custom which is at marked variance with that of the medical clairvoyants of civilized countries who, in case they are sick themselves, send for a regular physician.

The aboriginal therapeutics consist in the main of methods which, while extremely crude in their mode of application, are often capable of serving a useful purpose. Boils, for instance, are treated by poultices of marshmallow, snake-bites are sucked, or a ligature is tied above and below the part, and free bleeding encouraged by scarifying the part, or opening an artery. A practice which decidedly deviates from the general rule of serving a useful purpose is that adopted in uncontrollable hemoptysis, in which event the native doctor presses with his feet or even jumps upon the patient's body, usually with a fatal result. A curious approach to the modern German method of treating typhoid is seen in the aboriginal treatment of fever by continual bathing. This treatment, however, is said to be generally fatal in the hands of the native doctors.

Operative surgery among these tribes largely consists in the production of scars in various parts of the body for ornamental purposes. Wounds made for this purpose are kept open by filling with earth, charcoal, or ashes, and by these irritating substances hypertrophy of the scar is produced, so that they are sometimes half an inch high. Coming of age is celebrated by the gentle practice of knocking out one or two incisor teeth.

Circumcision is also done at coming of age to test a lad's power of enduring pain, and also to temporarily prevent the young men of a tribe from intriguing with the wives of the old men. A method of producing sterility in the male is that of slitting up the urethra from the meatus to the base, and binding it up in such a manner as to prevent its reuniting.

Amputation for severe compound fracture of a limb is performed by inserting the injured limb in a hole in the ground which is filled with earth to a point a little above the injury; The limb is then burned off by placing live embers around it.

Obstetrics among the aborigines, as is commonly the case among savage peoples, is reduced to its lowest terms, the woman suffering little pain or inconvenience from parturition. Abortion is occasionally brought on by pressing or thumping the abdomen, the introduction of instruments into the uterus apparently not having suggested itself to the native mind.

Primitive as the methods of aborigines in medicine are seen to be, the health of these native bushmen had been strong enough to perpetuate their race for centuries, until the deadly weapons and still more deadly diseases of civilization were brought to bear upon them by the civilized invaders of their country. It has become apparent that their total extinction will be a matter of a comparatively short term of years.

Correspondence.

THE STUDY OF DERMATOLOGY IN EUROPE.

(Continued from No. 19, p. 479.)

LONDON.

LONDON is different from Paris in many ways. Paris is the type of centralization in dermatology as in all other branches of science and arts. In Paris the student goes to one building and finds all; in London he must go to many, which lie scattered over the city from Blackfriars to Paddington on the east and west, and from St. Pancras to Westminster on the north and south — an area of no inconsiderable extent. But when once the stranger has reached his destination, he is well rewarded for his trouble. The student does not see many rare cases, but rather those which are useful and which he is liable to see in every-day practice in America. The student is not so likely to hear new theories advanced as in Paris, but he is sure to see some new drug or compound which is being tried to its utmost; in fact, London is a great city for hobbies in the way of therapy, a city where the very new and the very old are seen hand-in-hand. This is not true of all the men, for the younger ones show the effect of their Parisian study. The clinics to be visited while in London are to be seen in the following table which Dr. Colcott Fox very kindly drew up for me:

Day.	Hour.	Doctor.	Hospital.
Monday . .	9.45 A. M.	Mr. Morris.	St. Mary's.
Tuesday . .	1 P. M.	Perry.	Guy's.
	2 P. M.	Crocker.	University.
Wednesday .	1.30 P. M.	Fox.	Westminster.
Thursday .	9.00	Mackenzie.	London Hosp. for Skin.
	9.30	Pringle.	Middlesex.
	9.45	Mr. Morris.	St. Mary's.
	afternoon	Mr. Hutchinson.	At his clinical museum.
Friday . . .	..	......	... ..
Saturday . .	9.30 A. M.	Crocker.	University.

And also Dr. Payne at St. John's Hospital, Stamford Street, Blackfriars.

There are so many clinics that I cannot in this paper speak of them in detail, but will give my impressions only. Mr. Morris has an excellent clinic at St. Mary's and is a good teacher. He is a modern man and well known in English dermatology.

Dr. Crocker's clinic is very good also, and among his many, many cases of eczema, varicose ulcers and ringworm of the scalp he has some exceedingly rare and interesting patients — in truth it has been with him that I have seen my only cases of urticaria pigmentosa and universal scleroderma and my very best examples of morphea. Dr. Crocker is also one of England's foremost dermatologists and is an exceedingly good teacher, though a little loathe to accept new ideas and theories. He is always surrounded by students, whom he instructs by assigning them cases which they try to diagnosticate and prescribe for. Later, Dr. Crocker speaks very fully over the case, going into all its aspects. For these reasons it is very advantageous for the young dermatologist to attend these clinical talks, for he will see useful cases and hear the method of diagnosis explained in a careful and simple manner. For the more advanced student the impromptu talks are at times, perhaps, a trifle elementary, but then one can never hear medical principles discussed too often or too fully. On Saturday mornings Dr. Crocker holds a short lecture in the amphitheatre subsequent to his clinical work.

Dr. Fox is a wide-awake man and an interesting talker. Unfortunately he holds but one clinic a week. His cases are typical of London dermatology — a great many useful examples of disease, which are enlivened several times during the afternoon by cases rarer to London clinics. Dr. Fox is extremely pleasant and cordial to the stranger, and will do all in his power to help and advise him.

Dr. Mackenzie's clinic is the largest in London, and one which should not be omitted.

At Middlesex Hospital Dr. Pringle has a bi-weekly clinic. He is the best installed of any of the London men, for his audience- and dressing-rooms are well lighted and very neat and fresh. Of course a few visits are not a fair criterion upon which to base one's ideas, but to my mind Dr. Pringle's patients seemed of a more interesting class from a dermatological point of view. He seemed to me to be almost a Frenchman in his views on dermatology, and my mornings with him were quite a pleasant reminiscence of my cherished "St. Louis." Dr. Pringle received his training in Paris not a long time ago, and is thoroughly imbued with its clinical and therapeutical teachings, past and present.

I regret exceedingly that I was never able to attend any of the Thursday afternoon meetings at Mr. Hutchinson's museum. He is perhaps one of the most interesting and famous dermatologists and syphilographers living, and fortunately I was able to hear him speak at several of the dermatological meetings held in London in June, 1894.

I must also express regret for never having attended the clinics of Dr. Perry at Guy's and Dr. Payne at St. John's.

As will be seen from the description of my London work, there is very little opportunity of studying disease in house-patients. As with us in Boston, the number of beds available for skin diseases is distressingly small, and so English dermatology must suffer from the impossibility of proper study of the etiology, progress and treatment of dermatological processes. London is also weak in the facilities for microscopical work, being hampered by the same difficulties attending biopsies and necropsies which interfere with the study of pathology with us in America.

To my mind London is valuable, dermatologically speaking, in three ways: for the character of the teaching, for making one's self familiar with the commoner diseases and their treatment, and for becoming acquainted with the English methods and their exponents.

While in London I was fortunate enough to be present at the initial meetings of the new Dermatological Society of the United Kingdom, and of the London Dermatological Society. The former was, of course, extremely interesting through the gathering of so many well-known dermatologists from all parts of the British Isles, and from the papers read and from the patients presented. In June, 1894, a great wave of enthusiasm for thyroid extract as a panacea for all dermatoses and for psoriasis in particular had taken London completely by storm. It gave one a curious feeling to see so great a furore created by a medicament, which, in the words of its greatest advocates, was dangerous and not at all a sure means of cure. Nevertheless, almost all the men present were trying it in their own clinics, and practically all were seeing their patients return one after another for advice on account of a strange feeling of weakness, anorexia, headache, palpitation of the heart and general lowering of the body tone. For my part, the whole movement seemed like an unsubstantial fanaticism. Certainly the cures which could be ascribed unreservedly to the extract of the thyroid gland were exceedingly few, and even in these isolated instances the patients had usually undergone the usual depression following the ingestion of the drug.

The gatherings of the London Society are very informal affairs and have a social side to them. Very interesting cases are shown, and the patients are continually surrounded by a fresh group — listeners to the remarks of the original observers. The physicians do not sit down and have the cases demonstrated in turn, but go about in the large room and speak to their colleagues, who are sure to have something interesting to show them. In other parts of the room you will notice, perhaps, several groups enjoying their cup of tea and their bread or savory. The meetings are made very pleasant in this way, although perhaps not so systematic as they might be.

NORWAY.

In July my father joined me, and we sailed to Christiania, where we were most hospitably entertained by Professor César Boeck. We spent the morning in his hospital. There are, perhaps, one hundred beds devoted to the skin, and we saw many interesting cases, among which were a goodly percentage of syphilis and a proportionately large number of favus. Professor Boeck made to us the remarkable statement that mercury was never administered to his luetic patients — they received iron as their principal treatment. This method had been tried for several years, and no evils had followed. While in Professor Boeck's wards we saw an incipient case of leprosy. A young man, vigorous and sound-looking, bore over his lumbar region a pinkish-brown area the size of a double palm. This was his only visible symptom, and from the absolutely peculiar shade of this pigmentation Professor Boeck told us that the diagnosis was practically positive.

The out-patients are received in a room the walls of which are hung with the wonderful colored drawings of Danielsen, which are the truest to nature I have ever seen. They are the originals from which the atlas of Boeck and Danielsen was made, and are justly celebrated and well warrant the pride with which the present Professor Boeck showed them to us. Adjoining this room is the private room of Professor Boeck, which contains a good library and an excellent collection of dermatological drawings and photographs. I regret very much that our time in Christiania was so brief, for a student could hardly find a better or kindlier master to work under than Professor Boeck. He is thoroughly wide-awake to what is going on in the dermatological world, and is himself full of original ideas, and his deep researches with the microscope are well known.

From Christiania we travelled northward to Trondjhem, where we visited the leper establishment under the guidance and supervision of Dr. Sand. What a gloomy, disheartening place it was, with its 250 victims! But Dr. Sand gives his whole life up to them, and is illustrating all phases of the disease with original photographs, paintings and models.

The patients themselves were extremely interesting, and were of all ages from young children to old men and women, some of whom have lived for thirty years with this scourge upon them. The longevity of the patients was, I think, the most remarkable point I learned during our visit. The large number of cases made a lasting impression of the disease upon my mind. The wasting of the ulnar side of the arm, the nodes upon the ulnar nerve, the anesthesia, the tuberosities on the face, the deformities of the fingers and toes, the atrophies and subsequent disappearance of the digits of the hands and feet, the corneal alterations and resulting blindness, the emaciation, the intercurrent diseases, the utter misery, — all made upon me an indelible picture of the anesthetic and tubercular types of this horrible disease. The former division was far outnumbered by the latter; and in Norway the two types become mixed if the patient lives long enough, and so it was that we saw so few pure examples of the anesthetic variety.

The patients themselves seemed very cheerful and contented. Seclusion in a lazaretto is not compulsory in Norway, and the lepers are allowed to leave even after entrance; but, as a rule, most of these sufferers in Scandinavia make their homes in these hopeless retreats. Those who are physically able labor in the workroom at shoe-making and carpentering if they are men, and if women at spinning, carding wool and knitting. It was a strange and unpleasant sight, this wretched workroom, where the toilers were deformed or disfigured, all.

If one wanted to study leprosy in all its phases, surely no better place could be found than at the hospital in Trondjhem, but it would be a gloomy and dismal home, and we surely felt thankful as we once more drove over the glorious country on our way back to the city. Surely there could be no greater contrast in the world than the dark, forlorn lazaretto and the superb scenery of mountain and sea all about it.

BONN.

In mid-September I resumed my work; and as the microscope had been, through necessity, neglected during my first winter's study, I decided to do my utmost to cultivate this side of my education in the new winter opening before me. For this reason I visited Bonn, and found the place awaiting me which Professor Doutrelepont had promised my father. It was a great favor on my new master's part to allow me a desk in his own laboratory, and I greatly appreciated my position.

There are many advantages in Bonn. In the laboratory there are places for the "privat-docent" and the first and second assistants of Professor Doutrelepont. The one vacant space was allotted to me. A small but well-equipped library adjoins, where one finds many books of reference and contemporaneous dermatological magazines. The laboratory itself has a wonderfully good collection of pathological skin, which, in many instances has been carried — in regard to technique — to the stage of staining and mounting. These sections and the re-agents Professor Doutrelepont showed me, and said with characteristic kindness that all were mine to make the most of. For four weeks I worked in these rooms from morning until late afternoon, preparing a collection of slides which have since been of great value to me.

Professor Doutrelepont is exceedingly well installed in the large hospital of Bonn. He has many wards at his disposal and a large out-patient department. Every day the visit is made among the house patients, and subsequently the so-called polyclinic is held. I saw some very good cases while at Bonn, although I gave but little time to clinical work; and I am sure that during the term of the university a student could pass a most profitable three months in this charming town. Such a combination of clinical and pathological advantages as Bonn offers I found in only three other European cities. I was extremely sorry to leave Professor Doutrelepont's laboratory, but Vienna lay before me, and so I was forced to go.

CHARLES J. WHITE, M.D.

(To be continued.)

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DIPHTHERIA ANTITOXIN AT THE NEWTON HOSPITAL.

NEWTON, MASS., November 7, 1895.

MR. EDITOR: — During my service at the Newton Hospital for three months, beginning on the 1st August, 1895, there were 24 cases of diphtheria under my care. Not a single case proved fatal. All, with the exception of two extremely mild cases, were treated with antitoxin. The diagnosis was based on cultures examined by Professor Ernst of the Harvard Medical School Bacteriological Laboratory.

In one instance there were for a few days severe joint pains and high temperature following the tenth day after the antitoxin injection.

There were two cases in which the nose, as well as the pharynx, was invaded.

The larynx was involved in two cases. Tracheotomy was done in one of these latter soon after entrance, in an advanced stage of the disease. The patient was profoundly asphyxiated, yet recovery was rapid and uninterrupted. Six consecutive cases of tracheotomy have proved fatal in diphtheria at the Newton Hospital prior to this time and to the introduction of antitoxin. The favorable result in my operation is probably to be attributed largely to the antitoxin.

Albuminuria was not present in any case.

The only sequelæ were two cases of slight paralysis of the muscles of deglutition and phonation.

The average time spent by these patients in the hospital was sixteen days. The patients were not discharged till the bacilli had disappeared from the throat, as proved by repeated bacteriological examination. In one case the patient was in the hospital three weeks after the throat was entirely clean, and yet the bacilli were found present. They only disappeared when she was kept out-of-doors, and the bacilli were then either blown away or the patient ceased to be infected from the ward.

It may be argued that the cases are mild at the present time; but during about the same period as that here described the mortality in 34 cases of diphtheria occurring in this vicinity, in which the antitoxin treatment was omitted, amounted to 35 per cent. as reported to me by Dr. Curtis of the Newton Board of Health.

The antitoxin employed was that of Behring, the Massachusetts State Board of Health and of Gibier.

Can there be any better showing than this for antitoxin when one considers that no other form of treatment was used except stimulants?

Yours very truly,
KENELM WINSLOW, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 2, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,892,332	717	210	12.04	15.96	3.78	1.40	3.50
Chicago . . .	1,678,967	473	175	26.04	11.34	6.93	2.94	14.91
Philadelphia .	1,164,000	386	116	15.08	10.92	1.04	2.34	10.40
Brooklyn . .	1,100,000	350	122	15.96	18.96	3.64	.56	8.68
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	494,205	195	60	9.69	17.34	.51	3.06	5.10
Baltimore . .	496,315	186	78	13.50	10.80	3.78	3.24	4.32
Cincinnati . .	336,000	110	31	5.40	12.60	—	1.80	2.70
Cleveland . .	314,537	93	34	16.20	14.04	—	1.08	15.12
Washington .	275,500	—	—	—	—	—	—	—
Pittsburg . .	238,617	105	38	25.20	14.25	4.75	9.50	8.55
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	44	11	13.62	11.35	2.27	6.81	2.27
Charleston . .	65,165	33	12	18.18	—	9.09	6.06	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	36	13	24.93	11.08	5.54	—	13.85
Fall River . .	88,020	32	10	34.43	12.52	12.52	—	18.78
Lowell . . .	84,359	30	11	10.00	13.32	3.33	—	3.33
Cambridge . .	81,519	26	11	11.55	15.40	7.60	—	3.85
Lynn	62,355	19	5	31.56	—	5.26	10.52	5.26
New Bedford .	55,254	22	4	13.65	4.55	—	—	13.65
Springfield . .	51,534	20	2	5.00	5.00	5.00	—	—
Lawrence . .	52,153	14	8	14.28	7.14	7.14	—	—
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	12	1	8.33	—	—	8.33	—
Brockton . .	33,157	5	1	—	20.00	—	—	—
Haverhill . .	30,185	6	2	16.66	—	—	16.66	—
Malden . . .	29,706	7	1	14.28	—	—	14.28	—
Chelsea . . .	31,295	11	4	45.45	9.09	—	—	27.27
Fitchburg . .	26,394	5	2	40.00	—	20.00	—	20.00
Newton . . .	27,622	8	4	25.00	—	—	12.50	12.50
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	8	0	12.50	—	—	—	12.50
Waltham . .	20,877	7	0	14.28	—	—	14.28	—
Quincy . . .	20,712	2	2	—	—	—	—	—
Pittsfield . .	20,447	4	2	—	50.00	—	—	—
Everett . . .	18,578	—	—	—	—	—	—	—
Northampton .	16,738	3	1	—	33.33	—	—	—
Newburyport .	14,554	5	0	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,962; under five years of age 992; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 497, acute lung diseases 411, consumption 391, diphtheria and croup 109, diarrheal diseases 109, typhoid fever 74, whooping-cough 20, cerebro-spinal meningitis 15, scarlet fever and malarial fever 10 each, measles 9, erysipelas 5.

From whooping-cough New York 10, Philadelphia and Brooklyn 3 each, Baltimore 2, Providence 1. From cerebro-spinal meningitis Chicago 4, New York, Somerville and Chelsea 2 each, Baltimore, Worcester, Lynn, Lawrence and North Adams 1 each. From scarlet fever New York 3, Brooklyn 2, Philadelphia, Boston, Cincinnati, Pittsburgh and Lynn 1 each. From malarial fever Brooklyn 4, New York 2, Philadelphia, Nashville, Charleston and Lowell 1 each. From measles New York 4, Brooklyn 2, Baltimore, Boston and Pittsburgh 1 each. From erysipelas New York 3, Chicago and Worcester 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530 for the week ending October 26th, the death-rate was 19.7. Deaths reported 4,011; acute diseases of the respiratory organs (London) 235, diarrhea 203, measles 121, diphtheria 95, fever 74, whooping-cough 47, scarlet fever 42, small-pox (London) 1.

The death-rates ranged from 32.3 in Blackburn to 13.1 in Huddersfield; Birmingham 20.5, Bradford 21.7, Cardiff 16.4, Halifax 16.7, Hull 20.5, Leeds 20.8, Leicester 15.9, Liverpool 27.8, London 17.5, Manchester 26.1, Newcastle-on-Tyne 20.4, Nottingham 18.2, Portsmouth 17.9, Salford 30.5, Sheffield 21.0, Sunderland 27.6.

METEOROLOGICAL RECORD,

For the week ending November 2d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..27	29.92	54	67	42	84	76	80	S.W.	S.	18	15	F.	F.	—
M..28	29.90	58	70	46	89	36	62	S.W.	W.	13	19	F.	C.	.01
T..29	30.21	43	50	36	52	44	48	W.	N.	9	6	O.	O.	—
W..30	30.52	40	45	34	57	38	48	N.W.	N.E.	11	8	C.	C.	—
T..31	30.43	39	46	32	66	89	78	N.	E.	8	21	S.	R.	.15
F...1	29.88	48	54	42	92	58	75	W.	N.W.	16	14	O.	C.	2.67
S....2	30.19	40	44	35	65	95	80	N.	N.	12	14	O.	R.	.51
☞	30.35		54	38			67							3.34

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 9, 1895.

L. W. Curtis, passed assistant surgeon, ordered to duty at the Indian Head Proving Ground.

James Stoughton, passed assistant surgeon, detached from the Puget Sound Naval Station and ordered to duty at the Naval Hospital, Yokohama, Japan.

C. F. Stokes, passed assistant surgeon, detached from the Naval Hospital at Yokohama, ordered home and granted two months' leave.

H. D. Wilson, assistant surgeon, detached from duty at the Indian Head Proving Ground and ordered to duty at the Naval Hospital, Chelsea, Mass.

C. D. Brownell, assistant surgeon, ordered to duty at Puget Sound Naval Station on completion of his examination for promotion.

SOCIETY NOTICES.

Suffolk District Medical Society.—The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place on Wednesday, November 20th, at 8 o'clock P. M.

Papers: Dr. John Lovett Morse, "Typhoid Fever in Children with an Analysis of 284 Cases."

Dr. Frederick Coggeshall, "The Treatment of Severe Torticollis with Report of a Case."

John L. Ames, M.D., *Secretary*.

Boston Society for Medical Improvement.—A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, November 18th, at 8 o'clock.

Dr. D. A. Sargent, of Cambridge, will present, by invitation, a paper on "The Harvard Summer School of Physical Training, Its Aims, Its Methods and Its Work."

Dr. William James will make some remarks on "The Reaction on Mental States of Sound Muscular Power."

The following gentlemen have been asked to take part in the discussion: Prof. N. S. Shaler, Drs. H. P. Bowditch, G. W. Fitz and E. M. Hartwell.

James G. Mumford, M.D., *Secretary*.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lectures will be given on the evenings of November 21st and 22d, at 8 P. M., by **Professor Cheever**. Subject: "Abscess." The profession are invited.

RE-APPOINTMENT.

Dr. Frederick Holme Wiggin has been re-appointed by the New York Commissioners of Charities and Correction as visiting gynecologist to the New York City Hospital at Blackwell's Island.

RECENT DEATH.

Dr. Robert Battey, died Friday, at Rome, Ga. He was born at Augusta, Ga., 1828, was educated at Phillips Andover Academy and graduated from the University of Pennsylvania and from the Jefferson Medical College. In the Civil War he was surgeon in the Confederate Army. He was the first in this country to remove the uterine appendages for nervous disease, and the operation has sometimes been called Battey's operation. He was from 1873 to 1875 professor of obstetrics at the Atlanta Medical College and editor of *The Atlanta Medical and Surgical Journal*. Dr. Battey was a valued contributor to American and foreign medical journals, President of the Georgia Medical Association and member of the Atlanta Academy of Medicine, the American Gynecological Society and the American Medical Association.

BOOKS AND PAMPHLETS RECEIVED.

Two Fatal Cases of Sausage Poisoning. By Louis J. Mitchell, M.D., and John A. Wesener, Ph.G., M.D. Reprint. 1895.

A Case of Hydrosalpinx; Removal of the Right Tube and Ovary without Rupture of the Sac. By Hunter Robb, M.D. Reprint. 1895.

Certain Points in the Medico-Legal Investigation of Gunshot Wounds; Examination of Weapon, Body and Surroundings. By J. N. Hall, M.D., Denver, Col. Reprint. 1895.

Bulletin of the Harvard Medical Alumni Association, No. 8. Report of the Fifth Annual Meeting held in Boston, June 25, 1895. Boston: Published by the Association. 1895.

Mentally Deficient Children; Their Treatment and Training. By G. E. Shuttleworth, B.A., M.D., etc., Late Medical Superintendent, Royal Albert Asylum for Idiots and Imbeciles of the Northern Counties, Lancaster, etc. London: H. K. Lewis. 1895.

The Pathology and Treatment of Venereal Diseases. By Robert W. Taylor, M.D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons, New York, etc. With 230 illustrations and seven colored plates. Philadelphia: Lea Brothers & Co. 1895.

Flat-Foot; Its Correction and Comparative Study with the Foot of the Orang, Chimpanzee, Gorilla and Baboon. Lupus Treated by Galvanism. Double Club-Feet and Hands; Treatment. Illustrated by Photographs. By B. Merrill Ricketts, Ph.B., M.D., Cincinnati, O. Reprint. 1895.

Operative Treatment in Laryngeal Stenosis due to Acute Membranous Obstruction Commonly called either Diphtheritic or Membranous Croup; The Result of Personal Experience in One Hundred Intubations and Twenty-seven Tracheotomies. By Albert B. Strong, A.M., M.D., Chicago. Reprint. 1895.

A Text-Book of Physiology. By M. A. Foster, M.A., M.D., LL.D., F.R.S., Professor of Physiology in the University of Cambridge and Fellow of Trinity College, Cambridge. Sixth American edition, thoroughly revised, with notes, additions and 257 illustrations. Philadelphia: Lea Brothers & Co. 1895.

A Treatise on Nervous and Mental Diseases for Students and Practitioners of Medicine. By Landon Carter Gray, A.M., M.D., Professor of Nervous and Mental Diseases in the New York Polyclinic, etc. Second edition, revised and enlarged, with 172 illustrations and three colored plates. Philadelphia: Lea Brothers & Co. 1895.

Two Abscesses of the Brain caused by Septic Emboli resulting from an old Gunshot Wound of the Right Lung inflicted Thirty-two Years before; Evacuation of One Abscess; Improvement; Death from Exhaustion, caused by Primary Abscess and Old Lung Trouble. By J. T. Eskridge, M.D., Denver, Col., and Clayton Parkhill, M.D., Denver, Col. Reprint. 1895.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum.......... 1
Antikamnia Chemical Company...Antikamnia 2
Apollinaris Co.......... 1
Ayer's Hygienic Coffee.......... 2
Baker, L. W., M.D.......... Riverview 1
Baker, Dr. W. H..........Caro 1
Battle & Co..........Bromidia
Bellevue Hosp. Med. Col..... Sessions of '94-95 1
B. H. R. Distilling Co.......... 2
Boehringer & Soehne..........Ferratin 1
Borine Chemical Co..........23, 2
Bowdoin College..........Medical Department 1
Bowker, Dr. E. M..........Vaccine Virus
Boylston Medical Prize Questions..........
Breitenbach Co., M. J..........Pepto-Mangan
Castle, W. & Co..........Steam Sterilizer 1
Channing, Dr. Walter.......... 1
Chauncy Hall School.......... 3
Cocke, Dr. James R.......... 1
Codman & Shurtleff......Surgical Instruments
Coll. of Physicians and Surgeons, Boston... 1
Crittenton, C. N...Liquid Beef Tonic, etc. 18, 22, 2
Cutter, Dr. W. P.......... 1
Dartmouth College, N. H....Med. Department 1
Douglass, Dr. DeF..........Artificial Limbs
Edes, Dr. R. T.......... 1
Farwell & Rhines..........Dyspepsia Flour
Feeble-Minded Youth, Inst. for..Barre, Mass. 1
Fisk & Arnold..........Artificial Limbs
Flood, Dr. Everett.......... 1
Fougera, E. & Co..........Imp'g Pharmacists 8,
Gear, J. Frank..........Surgical Instruments
Goldthwaite, Dr. S. V.......... 1
Graham, Dr. Douglas......Treatise on Massage 2
Greene, Dr. E. M........Examinations of Sputa 1
Harvard Baby Food Co.......... 1
Harvard University........Dental Department 1
Harvard University.......Medical Department 3
Jaeger..........Underwear 2
Johnson & Johnson..........Kola
Lambert Pharmacal Co..........Listerine 1
Leedom, Charles..........Nuclein Solution
Lehn & Fink..........Mfg. Chemists 2
Lilly, Eli & Co..........Manfg. Chemists 1
Lloyd, Andrew J. & Co. .....Manufg. Opticians
Londonderry Lithia Water.......... 2
Long Island College Hospital.......... 1
Mackie, Dr. L. V. G. .... Sanitarium 1
Marks, A. A..........Artificial Limbs
Martin, Dr. F. C..........Vaccine Virus 3
McArthur Hypophosphite Co.......... 1
McElroy, P. J..........Glass Syringes
Medico-Chirurgical College.......... 1
Merrell, The Wm. S., Chemical Co.......... 1
Norton, Dr. Eben C..........Card 1
N. Y. Polyclinic and Hospital.......... 1
N. Y. Post-Graduate School and Hospital.. 1
Oakland Chemical Co.......Hydrogen Dioxide 3
Pabst Brewing Co..........
Patch, E. L. Co..........Lithia Tablets 2
Peake & Buzzell..........Surgeons' Supplies 1
Phillips Chemical Co., The Charles H.......
Pinaud, Ed..........Sels Romains 1
Planten, H., & Son..........Capsules
Polk, R. L. & Co........Med. and Surg. Register 2
Purdue Frederick Co., The..........
Removal..........
Ring, Dr. Allan Mott.........Nervous Diseases 1
Russell, Dr. F. W..........Card 1
Schulze-Berge & Koechl.......Migranin, etc. 5, 3
Scott & Bowne..........
Stedman, Dr. Henry R..........Card
Stillings, Dr. L. C. ....Card 1
Strong, Dr. S. E..........Sanitarium 2
Tanner, E. S..........Publisher 3
Thayer, Henry & Co.......... 2
Theodore Metcalf Co..........Coca 1
Twitchell, Dr. George B..........Card 1
Tyree, J. S. ....Antiseptic Powder 2
Umpleby, J. T. ....Photography
University of Vermont,.......... 1
Walker Pharmacal Co..........Phytoline 2
Walnut Lodge Hospital.......... 1
Warner, Wm. R., & Co.......... .Pills, etc. 1
Waterman, Dr. Thomas..Animal Vaccine Virus
Weeks & Potter Co. ....Quinona 3
Wheeler, Dr. T. B..........Phosphates 2
White, Dr. Walter H..........Card 1
Willard, Dr. A. J..........Card 1
Woman's Medical College, Baltimore....... 1
Woman's Med. Coll...of the New York Infirmary 1
Woodward, L. F. ....Stammering 1
Yale University..........Medical Department 1

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Instruction is given by lectures, recitations, clinical teaching and practical exercises, distributed throughout the academic year. In the subjects of Anat stology, Chemistry and Pathological Anatomy, laboratory work is largely substituted for, or added to, the usual methods of instruction. The year beg ptember 26, 1895, and ends on the last Wednesday in June, 1896, and is divided into two equal terms.

Students are divided into four classes, according to their time of study and proficiency, and during their last year will receive largely increased opportuni r instruction in the special branches mentioned. Students who began their professional studies elsewhere may be admitted to advanced standing; but all per o apply for admission to the advanced classes must pass an examination in the branches already pursued by the class to which they seek admission.

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PAGE

ORIGINAL ARTICLES.

loration of the Lateral Sinus. *By J. ne Green, M.D.*, Clinical Professor of Otology arvard University. 505
al Experience in Abdominal Surery at the Massachusetts General ospital. *By J. Collins Warren, M.D.* (Coninued.) 507
ggestions in Regard to the Operations or the Cure of Inguinal and Femoral ernia. *By A. T. Cabot, A.M., M.D.*, Boston. 510

CLINICAL DEPARTMENT.

Case of Trichinosis: Death. Autopsy. *By Edgar Garceau. M.D.*, Surgeon to Out-Paients, Free Hospital for Women, Boston....... 512
e New Surgical Splinting. A Further eport of Cases Exemplifying It. *By Edoard A. Tracy, M.D.*, Boston, Fellow of the assachusetts Medical Society.... 513

MEDICAL PROGRESS.

port on Therapeutics. *By Francis H. Williams, M.D.* 514
Tannigen.— A Rational Diabetic Flour.— The Treatment of Diphtheria by Antitoxin.— The Decline of Hypnotism.

REPORTS OF SOCIETIES.

erican Gynecological Society. Twentieth Annual Meeting, Baltimore, May 28, 29 and 30, 1895. (Concluded.)............ 518
Specimens Removed by Vaginal and Abdominal Hysterectomy.— The Treatment of Puerperal Eclampsia.— The Ultimate Results of Trachelorrhaphy.—The Prophylaxis and Treatment of Puerperal Eclampsia.— A Few Cases of True Pelvic Cellulitis: a Plea for More Thorough Pelvic Surgery.— The Prevention of Uterine Disease due to Child-Bearing.— Deciduoma Malignum.— Some Points in Symphyseotomy.— Symphyseotomy in Canada and the United States.—The Value of Gauze Drainage.

RECENT LITERATURE.

The Care of the Baby. By J. P. Crozier Griffith, M.D. Philadelphia: W. B. Saunders & Co. 1895. 522
A Textbook of Chemistry. By Samuel P. Satler, Ph.D., F.C.S., and Henry Trimble, Ph.M. Philadelphia: J. B. Lippincott Co. 1895............ 523
Practical Dietetics, with Special Reference to Diet in Disease. By W. Gilman Thompson, M.D. New York: D. Appleton & Co. 1895............ 523
Syphilis. By Alfred Cooper, F.R.C.S. Eng. Edited by Edward Cotterell, F.R.C.S. Eng. Philadelphia: P. Blakiston, Son & Co. 1895............ 523
Physical and Natural Therapeutics. By Georges Hayem, M.D. Edited by Hobart Amory Hare, M.D. Philadelphia: Lea Brothers & Co. 1895. 524
Eyesight and School Life. By Simeon Snell, F.R.C.S., Ed. Bristol: John Wright & Co. 1895..... 524
Politzer's Text-Book of the Diseases of the Ear and Adjacent Organs. Translated by Oscar Dodd, M.D., edited by Sir William Dalby, F.R.C.S., M.B.......... 524
Diseases of the Ear. By Edward Bradford Dench, Ph.B., M.D. New York: D. Appleton & Co. 1894. 524
The Lumleian Lectures on Certain Points in the Ætiology of Disease. The Harveian Oration. By P. H. Pye-Smith, M.D., F.R.S. London: J. & A. Churchill. 1895.......... 524

EDITORIALS.

The Economics of Prostitution............ 525
The Case of Miss Lanchester............ 526
Our Corpulent Policemen............ 527
Medical Notes............ 527
A Noble Epitaph.— A Woman Physician receives Official Recognition in Austria.— The Efficiency of Electric Heaters. — The Latest Faith-Healer.
New England.
Acute Infectious Diseases in Boston.— Fatal Coasting Accident on the Bicycle. — Annual Meeting of the Alumnæ Association of the Boston Training-School for Nurses.— Medical Registration in Maine.— The Seventh Son of a Seventh Son.
New York.
An Unfortunate Combination. — New Baths for the Bellevue Hospital.— Bequests to a Hospital and Sanitarium.— A Suit with Damages for Vaccination.— An Appointment by Civil Service Rules.— Death of Dr. Zabriskie.— A Remarkably Low Mortality.
Philadelphia.
The Pennsylvania Colony Farm for Epileptics. — Schleich's Method of Local Anesthesia.— Changes in the Staff of the Philadelphia Hospital.— Radical Cure of Hernia.

CORRESPONDENCE.

The Study of Dermatology in Europe. *Charles J. White, M.D.*, Boston. (Continued)... 529

MISCELLANY.

Virchow on Pasteur............ 529
Meteorological Record, November 9, 1895... 532
Record of Mortality, November 9, 1895..... 532
Army and Navy Services............ 532
Society Notice............ 532
Excursion to Bermuda............ 532
Books and Pamphlets Received............ 532

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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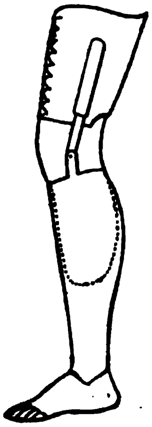

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PAGE 21.

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Original Articles.

EXPLORATION OF THE LATERAL SINUS.

BY J. ORNE GREEN, M.D.,
Clinical Professor of Otology in Harvard University.

The early and certain diagnosis of phlebitis of the lateral sinus from symptoms alone, is in all cases difficult, and in most cases impossible. As the disease is fairly amenable to surgical treatment in its incipiency, but very much less so in its later stages, it becomes important to know how far we are justified in carrying our surgical procedures on a suspected diagnosis merely. As contributions to the subject of exploration of the lateral sinus for purposes of diagnosis, I offer the three following cases: incidentally, two of them also illustrate the disease (osteo-phlebitis) which so closely resembles phlebitis of the sinus in its early stages that only an exploratory operation can complete the differentiation. They are the only explorations of a healthy sinus that I have done.

Sinus-phlebitis in about two-thirds of the cases, according to the statistics of nine thousand autopsies by Pitt, at Guy's Hospital, is due to suppuration of the ear and disease of the temporal bone. In the greater part of these ear diseases, it is the mastoid, which lies in direct relation to the sinus, from whence the infection reaches the sinus. Given a suppurating ear and symptoms of sinus-phlebitis, the probabilities are very great that one is the cause of the other; an absence of injury or of suppuration in any other part of the body, and the existence of mastoiditis, is almost certain confirmation of the connection between the ear and vein.

We may have symptoms of sinus-phlebitis: (1) Cerebral. (2) Externally objective. (3) Pyemic and septic.

(1) Headache, diffuse, on the affected side or in the ear. Vomiting in the beginning of the disease. Congested papillæ and optic neuritis. Psychic depression.

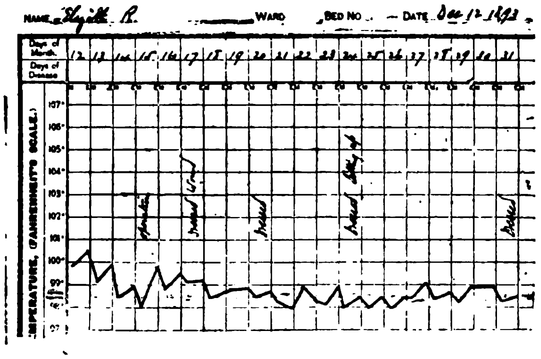
(2) Extension of thrombosis to veins outside the skull, which can be felt to be corded; these are the internal jugular and mastoid emissary. Injury to the nerves which pass with the sinus through the jugular foramen, vagus, accessorius, and glosso-pharyngeus; this is extremely rare.

(3) Chills and a pyemic temperature; later, enlargement of spleen and metastases.

Of these symptoms, those in the last group, chills and pyemic temperature, are by far the most common in the early stages of the disease, which alone we are considering. Thrombosis of the jugular or mastoid emissary occasionally enables us to make a diagnosis, before septic symptoms appear. Chills and pyemic temperature mark an infection of the general system from an infected thrombus; the very earliest stages of phlebitis and thrombosis, before the thrombus has become infected, or before the infected material has entered the general system, may give no symptoms whatever. We see this occasionally in opening the mastoid where the sinus is found inflamed and thrombosed, and without the existence of any symptoms referable to the vein. As a rule, however, inflammation of the sinus, thrombosis, and general infection follow so rapidly, one on another, that chills and pyemic temperature can be considered early symptoms.

In two of the following cases, a chronic suppurating tympanum was running its course without attention, and without marked temperature or any cerebral symptoms, when suddenly there was a chill, and temperature of 105° F. In the third a chronic tympanic suppuration was followed by sudden and persistent dizziness and vomiting, with a moderate rise in temperature. In all three, examination showed such a sensitiveness of the mastoid to pressure as to justify the diagnosis of mastoiditis, and a mastoid operation was advised and immediately undertaken. During the operation the lateral sinus was exposed, aspirated, and proven healthy, without any injurious effect, and phlebitis of the sinus was thus excluded. The subsequent history of all was that of a mild septic fever, which improved steadily from the time of the operation, and was over in from one to two weeks; in fact, the not unusual history of osteo-phlebitis in which, if the pus-focus is removed early by operation, thus preventing further septic infection, the prognosis in most cases is good. The fever had already begun before the operation and, in all probability, was not connected with that procedure.

E. R., a girl aged fourteen, with chronic suppuration of the right tympanum for years, had extreme dizziness and constant vomiting for three days, before entering the Massachusetts Charitable Eye and Ear Infirmary on December 12, 1893. The drum-membrane was destroyed entirely, and an extensive surface of carious bone could be felt in the antrum and posterior part of the meatus. There was constant headache in the frontal region, intense vertigo horizontally, from right to left, with flushing of the face on sitting up; inability to take any food. The watch was heard on contact; the mastoid antrum and tip were somewhat tender on pressure, but the external tissues not reddened or edematous.



On the 14th, under ether, I exposed the mastoid, and finding it discolored and softened, I opened the antrum, which was full of detritus and carious bone. In doing this, it was found that the inner wall of the mastoid was destroyed by caries, for more than a quarter of an inch in diameter, exposing the dura over the lateral sinus. A full Schwartze-Stacke operation was then done, and all carious bone removed in the antrum and attic. The exposed dura was white, and free from granulations, not pulsating. The sinus was soft and showed no respiratory pulse. An exploring needle was inserted but gave only dark venous blood. All the parts were thoroughly douched with boiled water, and iodoform packing used.

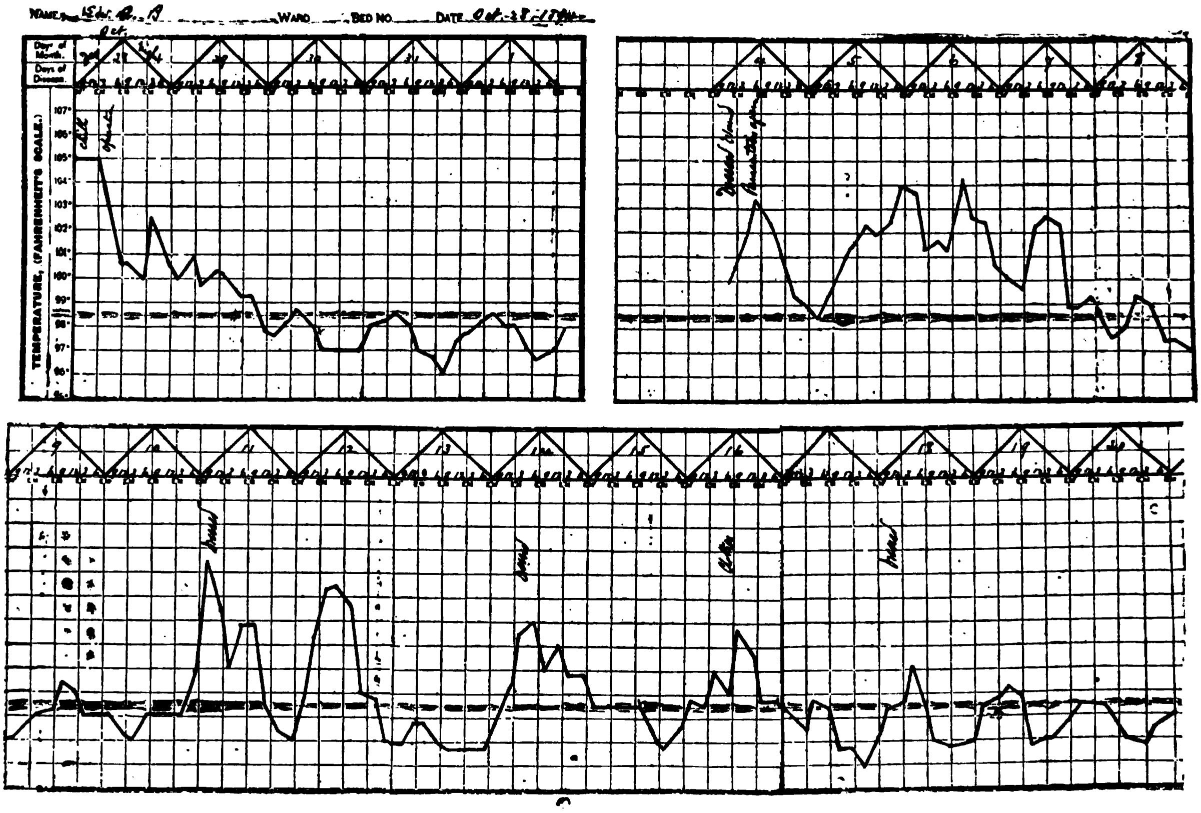
The headache, vertigo, and vomiting were relieved almost immediately. No symptoms followed the exploration of the sinus. The posterior wound closed by granulation in about six weeks, and the discharge from the tympanum ceased, but soon began again from the attic, and has continued since.

The general condition was good seven months after the operation, although the purulent discharge from the attic continued.

Edward A. B., aged eleven, with suppuration of the left tympanum of several weeks' duration, had complained of pain in the ear, tenderness of mastoid, and headache for three days, followed by a chill and a temperature of 105° F. He was immediately brought to the Infirmary, October 28, 1894.

The meatus contained very offensive pus, which exuded through a minute perforation, in a greatly infiltrated and inflamed drum-membrane. The whole mastoid was sensitive, but particularly so along its posterior edge, and there was sensitiveness for two inches, along the edge of the sterno-cleido-mastoid muscle, but no cording of the jugular, and no swelling.

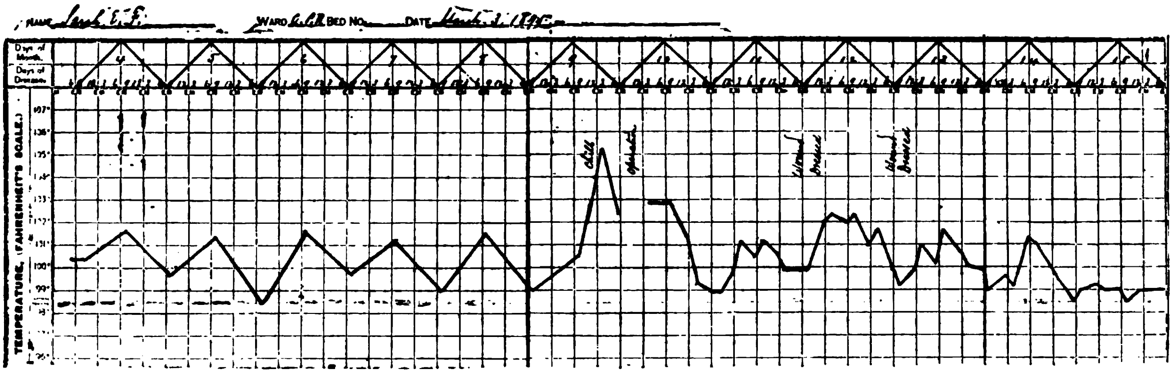
Under ether, a free paracentesis of the drum-membrane was done, the mastoid exposed, found to be darkly discolored and opened with a gouge and mallet. The cortex was thin, the bone diploetic throughout, and the diploe in a state of suppuration. With the object of exploring the sinus, the posterior inner cortex was cracked with a small chisel. In attempting to raise the piece thus broken there was immediately a profuse venous hemorrhage, undoubtedly from the lateral sinus in the upper part of its perpendicular section. The bleeding was readily checked by a tampon of iodoform gauze, and the absence of thrombo-phlebitis having been thus proved, the operation was completed by curetting all of the suppurating diploe, and by an iodoform gauze packing and an aseptic dressing.



The case did perfectly well for one week, as is seen from the chart. There was then a sharp rise in temperature and the packing was removed for the first time, but there was absolutely no suppuration in it. The opening in the drum-membrane had closed, there was distinct bulging from retained secretion, and a fresh paracentesis was done.

The subsequent history is that of a mild septicemia, with very little discomfort, and healing of both wound and tympanum, with perfect hearing at the end of a month.

Sarah E. F., aged thirty, was admitted to the Boston City Hospital, on March 3, 1895, with an acute suppuration of the left tympanum, of two weeks' duration. The inflammation was intense, the drum-membrane greatly infiltrated, and the mastoid sensitive on pressure. The discharge was abundant and purulent. Paracentesis was required twice, and there was more than the usual amount of pain, till the 9th, the day after the last paracentesis, when there was a severe chill, and a temperature of 105.2° F. The next morning a mastoid operation was done; the bone was almost entirely diploetic, with a minute amount of pus in the interstices of the diploe. The inner cortex was softened and destroyed over a surface three-fourths of an inch in diameter, thus exposing the dura and sinus. The dura was white, without granulations, pulsation, or respiratory movements. The sinus could not be distinguished, and the first exploration with an aspirator was negative, but the next, a short distance further back, gave venous blood, showing the absence of thrombo-phlebitis. The suppurating diploe was removed as thoroughly as possible, douching with corrosive sublimate solution, 1–5,000, freely used, iodoform gauze packing and an aseptic dressing applied. For the next four days there was a mild septic fever; convalescence was then rapid; both wound and ear healed with perfect hearing. The dura covered rapidly with granulations, and the wound was cleansed at each dressing with hydrogen-dioxide. At the end of about one month the patient, a nurse, resumed her duties.



The accident of tearing the sinus in removing the first piece of the internal cortex of the bone, as occurred in the second case, has happened to me also in one case of abscess of the temporal lobe of the brain, which I was endeavoring to locate by following the diseased bone inwards, all other means of localizing being absent, from the unconsciousness of the patient. As in the case here given, an attempt to raise the first fragment of bone was followed by a violent venous hemorrhage, which was, however, readily checked with a gauze tampon.

Since these two experiences, I have used a round burr on a surgical engine to grind down the bone to a thinness which allowed it to be removed without any violence, and I have been much pleased with the method. The difficulty is in getting the first small opening through the bone without injury to the dura. Having once accomplished this, the opening can be enlarged to any extent by curettes, or a small rongeur.

◆

CLINICAL EXPERIENCE IN ABDOMINAL SURGERY AT THE MASSACHUSETTS GENERAL HOSPITAL.

BY J. COLLINS WARREN, M.D.

(Continued from No. 20, p. 491.)

Gall-Stones, Cholecystotomy, Recovery. — A woman, married, thirty-four years of age, entered November 5, 1893, with a history of a sudden attack of epigastric pain combined with vomiting. These symptoms came on thirty-six hours before, and were preceded by twenty-four hours by a chill. Obstinate constipation. Convulsions night before entrance. Has had similar attacks during last seven years. She was very hysterical. Poorly nourished. Induration and tympany in right hypochondrium. There was no jaundice. During the next two days the pain and tenderness increased, the appearance of a tumor became more marked and on November 8th she was prepared for operation.

A five-inch incision was made over the gall-bladder region along the line of the linea semilunaris. An enlarged edematous liver presented, with gall-bladder adherent to the intestines. After aspiration the bladder was opened, and 150 stones removed from the cystic duct. The interior of the gall-bladder was curetted, and the bladder stitched to the abdominal wound with a rubber drainage-tube inserted. A sterilized dressing and swathe were applied. The patient made a good recovery from ether. On November 14th the tube and gauze were replaced, and the bile conducted into a bottle. On November 22d the tube was removed. On December 9th, having done perfectly well, she left the hospital, refusing operation to close a small slowly healing sinus.

Gall-Stones, Cholecystotomy and Choledochotomy, Death. — This patient entered the medical ward November 21, 1893. She was a working girl, single, twenty-two years of age, a native of Newfoundland. She complained of indigestion for several years and had been treated in the Out-Patient Department of the Massachusetts General Hospital. About a month ago her distress after eating became real pain, and in the past three weeks she has suffered from vomiting and itching of the skin. She has been jaundiced, with dark urine and clay-like stools, and is greatly emaciated. Occasional chills. Spirits not low. Upon examination the chest was negative. The liver dulness extended from the fifth rib to one inch below the costal border; the edge was not felt. On January 2, 1894, on account of progressively increasing severity of symptoms, she was transferred to the surgical ward for operation. After entering the surgical side she improved greatly; but as the attacks from which she suffers incapacitate her from regular work, she desired an operation.

A five-inch incision parallel to the right costal border exposed a distended gall-bladder, which was opened by a transverse incision through the fundus. The intestines were walled off with gauze. About an ounce of normal bile and five small stones were removed from the cystic duct, which was tortuous and thickened. It was necessary to incise the cystic duct to remove one large impacted stone. This wound was closed with silk Lembert sutures. The gall-bladder was sewed to the abdomnial wound with silk sutures, which passed only through the peritoneum. The external wound was partially closed with a rubber tube in the bladder and a gauze wick draining the wound of the cystic duct.

The patient made a good recovery from the anesthetic.

The wound drained well, and on the fourth day the gauze drain was withdrawn and the rubber was replaced by gauze. She vomited constantly, however, retaining no nourishment either by mouth or rectum; there was not at any time tympanites or other symptoms of peritonitis. Finally, an excessive diarrhea set in and on February 8th, ten days after the operation, she died.

At the autopsy the diagnosis was made of septicemia, probably following necrosis of liver.

This case is of more than usual interest, as but comparatively few cases of suture of the gall-ducts have been attempted.

EXPLORATORY LAPAROTOMY.

Exploratory laparotomy was performed in six cases. In one case, not reported at length, the operation was performed for the purpose of determining the possibility of hysterectomy for carcinoma uteri. The explorations clearly showed, what could not be determined by a vaginal examination, namely, the futility of such an operation, the disease involving both broad ligaments and extending along the linea pectineæ. The case of E. F. C. shows the obscurity attending some types of abdominal disease. It seemed possible that the abdominal symptoms were but an accompaniment of some acute febrile disturbance.

Fibrous Polyp of Cervix Uteri, Exploratory Laparotomy, Recovery. — M. W., entered November 10, 1894. Fifty-six years old, of rather dwarfish stature, married. Two children and two miscarriages. Last August, acute retention relieved by the catheter. Twice since relieved in same manner. Six years ago had "falling of womb"; returned by hot douches. Climacteric nine years ago. Has foul leucorrhea and considerable backache. By the vagina a rounded mass, nearly filling the small pelvis, could be felt, but no cervix could be made out. Bimanually a small mass was felt above the pubes. She was etherized November 26th, and on account of the unsatisfactory examination it was thought best to open the abdomen to be sure that the uterus was not inverted. The organ was found in normal position and of normal size, but firmly held by the mass in the vagina. The diagnosis of polypus being thus confirmed (and it could be felt below Douglas's fossa), the abdominal wound was protected, and in the lithotomy position the tumor was delivered through the vulva, the pedicle rupturing during manipulation. The wound on the anterior cervical lip was sutured and the vagina packed with iodoform gauze. The polypus was the size of a cocoanut. The abdominal wound was then closed with interrupted silkworm-gut, and a dry dressing applied.

The patient made a most excellent recovery, and three weeks later, on December 20th, was sent to the Convalescent Home, much relieved. In the latter part of February, owing to flowing, the uterine cavity was curetted.

Reports, July, 1895, that she feels much better than when she went to the hospital, though sometimes pains occur in the back. Since curetting has flowed three or four days on one occasion.

Cancer of Peritoneum, Laparotomy, Recovery.— S. P., age fifty-seven, a widow, entered January 7, 1895. Menopause at forty-five, and since then has grown stout. She has had rheumatism for several years. Last summer, after hard work, she experienced a sudden sharp pain in the left side, and shortly after the belly swelled. The swelling continued for three or four weeks with occasional pain, finally relieved by free catharsis. She has had several attacks of this nature, and the abdominal swelling has persisted. There is no history of specific lesion. Lately the bowels have been constipated, but she has never vomited. She has lost flesh lately.

The abdomen was found enormously and evenly distended. Tympanitic, save in left flank. Hard masses could be felt below and to right of umbilicus. Tender only below and to left of ensiform cartilage. Edge of liver not felt.

January 14th, the abdomen was opened giving escape to about six pints of clear serous fluid. The omentum, mesentery and intestines were studded with nodules, one of which was removed and found by Dr. Whitney to be cancerous. The wound was closed and a dry dressing applied.

She felt relieved by the operation, although the fluid rapidly re-accumulated; and, as no operation was deemed feasible, she was discharged on February 1st.

July 1, 1895. Now at St. Elizabeth's Hospital, where she is failing slowly.

Peritonitis, Laparotomy, Death. — E. F. C., thirty-nine, a sail-maker, born in Massachusetts and living in Boston, entered hospital January 4, 1894. His general health had always been good. Alcohol had been taken to excess at times, and he had had gonorrhea. For about a week there had been some pain in the right side but this had been severe for only three days, causing him to give up work first and then take to bed. There had been no vomiting, no chills. The bowels had moved two days before. Very little urine had been passed for forty-eight hours, and none for twenty-four. At the time of entrance there was general abdominal distention and tympany and tenderness, particularly in the right iliac fossa. There was dulness in the hypogastrium extending about four inches above the pubes. The pulse was 135 and very compressible. The temperature was 102.5. There was marked leucocytosis. The expression was dull, the color of the skin dusky, the condition of the patient appeared extremely grave.

After consultation, immediate exploration was advised. An incision five inches long was made over McBurney's point. A small amount of serous fluid escaped from the peritoneum. The large and small intestines were much distended and congested in several areas about a foot in length. The appendix was normal. No constricting band was to be seen or felt. The small intestine was incised at its middle, and stripped of its contents from both ends. The bladder was emptied by catheter. A large opening was made in the cecum for an artificial anus. The intestines were thoroughly irrigated with sterile water and replaced, the wound of the small intestine being first closed.

During the operation and after it there was fecal vomiting. The vomiting increased until a black fluid without fecal odor was repeatedly regurgitated. In spite of the most vigorous stimulation the patient failed rapidly, and died about fifteen hours after entrance.

At neither the operation nor autopsy was the cause of the peritonitis found.

Obscure Abdominal Tumor, Laparotomy. — W. S., age thirty, a veterinary surgeon, born in Maine and living in Boston, entered the hospital on January 7, 1894. His grandfather had died of phthisis. He had been subject to rheumatism for six years, but had otherwise always been well till nine months ago. He had a sharp pain accompanied by an induration in the right iliac fossa at that time, which confined him to bed for six weeks, and which was attributed to appendicitis.

About three months ago he first noticed a tumor about the size of a lemon in the left iliac region, which was tender but not painful. In the last three weeks it had grown rapidly. During the last six months there had been rheumatic pains in the abdominal muscles, worse on the left side. In the last three months there had been four or five attacks of chills. There had been night-sweats, loss of strength and of twenty-five pounds in weight in two months. The tumor filled the left iliac region, extending two inches to the right of the median line, as high as the umbilicus and within two inches of the symphysis. It was very movable, did not fluctuate, could not be felt by rectum, and was somewhat adherent to the skin.

On January 12th a vertical incision, three inches long, was made over the middle of the tumor. The overlying tissues were porky. On cutting through them about three drachms of thick pus was evacuated from a large cavity about an inch below the surface, the walls of which were lined with cheesy tissue which was curetted away. The peritoneum was thoroughly walled off. The cavity was packed with iodoform gauze. The wound granulated well. In two weeks he was up, and discharged relieved, with a small granulating area.

An inoculation of guinea-pigs with the contents of the cavity gave a negative result. A careful search was made for actinomycosis, but no evidence of that disease could be found, although the great thickness of the abscess wall and the great amount of induration suggested it.

W. S. writes me, under date of August 10, 1895: "There is no enlargement or soreness; and were it not for the scar and the fact that I get tired on that side when I ride much, I should never know that I had been troubled there."

An examination of the cicatrix, August 14th, shows a slight hernial protrusion at one point. It seems, on the whole, probable that the patient's theory, that the present cold abscess was a sequel of his attack of appendicitis nine months before, is the correct one.

RADICAL CURE OF HERNIA.

The method which I have adopted during the last few years is that known as the Bassini method. The object of this operation is to restore the normal anatomical relation of the parts as nearly as possible. An incision four or five inches long uncovers the anterior wall of the canal and the external ring. The anterior wall is slit open and the exposed sac is separated from the cord, ligatured, excised, and the stump dropped back into the peritoneal cavity. If there is a large amount of omentum in the sac, it is usually cut away. The cord is now gently dissected (not stripped) from the canal and held on one side by a soft strand of gauze. The most important feature of the operation is the next step, which consists in uniting the conjoined tendon to the salient and glistening edge of Poupart's ligament. This can be done by silk, chromicized gut or kangaroo-tendon sutures. It is necessary to take from three to six interrupted sutures. The cord is now laid down upon this new floor, and the edges of the aponeurosis of the external oblique are brought together again over it. I take the liberty of rehearsing the steps of this well-known operation, as I have seen so many imperfect operations performed under its name. I have only seen a small percentage of the cases thus operated upon by me, but have not seen a case yet in which this method was carried out faithfully in which the hernia had returned.

The case of B. O'C. is the last case in which I attempted the Macewen method, the sloughing of the dissected sac being a calamity which seemed likely to repeat itself owing to the extreme thinness of the sac wall in most cases after dissection. In cases of umbilical hernia it is often difficult to bring the edges of the ring together so as to make a vertical scar. In this case the wound can be closed readily and without tension so as to form a transverse cicatrix.

Inguinal Hernia. — B. O'C., age forty-six, entered the hospital February 21, 1894. She was married, but had never had any children. Four years previously she had been operated on by me for a left inguinal hernia of six years' standing, due to a strain in lifting. At that time there was an omental hernia filling the labium, the size of the fist. The sac was folded according to the method of Macewen, and made to plug the inner ring, which easily admitted two finger-tips. The edges of the ring were snugly united and the tissues overlying them stitched together. The entire sac thus folded eventually sloughed away, and the wound healed by granulation. She was discharged with a firm, thick cicatrix.

Two months later the hernia re-appeared. She then wore a truss, but for three years it has failed to hold. Is now half the size of the fist, contains bowel, and is easily reducible. It fills the labium.

On February 23d an incision four inches long was made over the old scar. The bowel was exposed and replaced. The internal ring admitted four finger-tips. The sac was dissected out, and cut off at its neck, the edges of the peritoneum being inverted and stitched together by a continuous silk suture. The conjoined tendon and Poupart's ligament were then united by several interrupted silk sutures; and then the anterior wall of the canal was stitched together by another row of silk sutures. The skin was then united by silkworm-gut sutures. A dry dressing was applied.

Three weeks after operation she was up, with a light truss and soft pad. The scar was solid, and there was no impulse on coughing. She was discharged well.

This patient was seen by me eighteen months after the operation. There had been no return of the hernia. A light truss was still used.

Ventral Hernia following operation for Appendicitis, Operation, Recovery. — J. C., a man about fifty years of age, had his appendix removed three months ago. During his convalescence from the operation he was afflicted with a persistent cough, and two weeks ago noticed a bulging in the cicatrix. This has grown steadily, nearly doubling in size during the first week.

On November 14th, an incision was made along the scar into the peritoneal cavity. The edges of the aponeurosis of the external oblique were found widely separated. The intestinal adhesions to the wound were freed; the separated and retracted peritoneum, aponeurosis and muscles were dissected out and sutured in layers. Interrupted silk to peritoneum and to fascia, silkworm-gut to the other tissues. Dry, sterile gauze and long strips of adhesive plaster across wound were applied, and a swathe. The patient still suffered from a considerable cough, but the wound healed by first intention and without a symptom.

On November 29th, fifteen days after the operation, he was discharged well. He was seen December 15th, and the wound found to be solid, with no impulse on cough.

July, 1895. Has been in good health. No return of hernia.

Umbilical Hernia, Operation, Recovery. — H. M., age fourteen months, entered November 12, 1894. He has a congenital navel hernia, varying in size from a walnut to a small orange.

November 13th. The umbilicus was excised by an elliptical incision. The fascia and peritoneum were dissected out and the bowel returned to the abdominal cavity. The peritoneum and fasciæ were closed in separate layers by interrupted silk, and the rest of the wound by interrupted silkworm-gut. A dry dressing and straps of adhesive plaster were applied.

On the second day the bowels were moved by enema of suds and glycerine. On the sixth day the sutures were removed. The wound had healed by first intention, and there was no impulse on cough or crying. The adhesive straps were re-applied, and he was discharged well, fifteen days after the operation.

His diet for the first two days was malted milk in hot water. After the second day he was given milk and soft solids, care being exercised.

July, 1895. Scar perfectly solid. No sign of any recurrence.

In three other cases in which answers have been received to my inquiry there has been no return of the hernia at periods varying from six to eighteen months. In one case in which the sac of the hernia being small, it was left untouched, the patient writes that he is more troubled than before, as the opening is smaller and there is more difficulty in returning the hernia. The hernia reappeared a few weeks after the operation.

(*To be continued.*)

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SUGGESTIONS IN REGARD TO THE OPERATIONS FOR THE CURE OF INGUINAL AND FEMORAL HERNIA.

BY A. T. CABOT, A.M., M.D., BOSTON.

THE success of hernia operations depends upon the nice adjustment of the parts to stand a strain which has already once overcome the barriers offered by nature. Niceties of technique make or mar this success, and any suggestion which may perhaps make the closure of hernial canals more sure, has, therefore, a certain importance, even when it proposes but slight alterations in previous methods.

It is on this account that the following modifications of existing methods are brought to the attention of operators, with the hope that they may contribute something to increasing the chances of cure in this difficult class of cases.

INGUINAL HERNIA.

All operations for the radical cure of inguinal hernia showed themselves to be of but uncertain value until the plan of transplantation of the spermatic cord was suggested and carried out by Halsted and, in a different form, by Bassini. While it is perhaps, even yet, too soon to speak positively of the measure of success which will follow these new methods of operating, still, enough experience has been accumulated to show that the spermatic cord is indeed the key to the lack of success by the older methods, and to demonstrate the value of putting the opening through which this cord emerges at a point where it is more out of the line of pressure than in its natural position.

By Halsted's method the cord comes through all of the layers of the abdominal wall in one straight canal and then runs downward beneath the skin. By Bassini's method the somewhat valvular arrangement which normally obtains in the inguinal canal is reproduced. The cord perforates the muscular wall, then runs downward between the muscles and the aponeurosis of the external oblique to finally emerge through this dense fibrous layer at about its usual normal point.

If the future history of these cases is to show that the short, direct canal furnished by Halsted's operation is not liable to dilatation, and that this method affords a reliable cure, then it is quite unnecessary to trouble ourselves to re-establish an oblique canal.

If, however, it is found to be of advantage to have the canal more or less valvular in arrangement, it may well be doubted, I think, whether we should follow Bassini and produce a replica of the canal furnished by nature, for the unsatisfactory nature of that canal is attested by the frequent occurrence of hernia. Its downward direction makes it rather easy for the abdominal contents to force down into and along it. It would, therefore, seem better to make the new canal run upwards and outwards so that the downward pressure of the bowels would act at right angles to its axis and so would tend to force its walls together. Made in this way it would work in a more perfectly valvular way than the natural inguinal canal.

The operation which I propose, and which I have carried out in one instance,[1] is to slit the aponeurosis of the external oblique muscle well up towards the anterior superior spine of the ileum, exactly as is done in Bassini's operation, to tie or suture and cut off the sac on a level with the peritoneal surface; then to suture the internal oblique and transversalis muscles and transversalis fascia on the inner side to Poupart's ligament on the outer side. These stitches may include the edges of the slit in the external oblique aponeurosis thus closing the old inguinal canal.

Finally, to close the upper remaining part of the slit in the external oblique aponeurosis with a continuous buried suture, which shall also include the upper edge of Poupart's ligament. This closure is to be done from below upward, and the spermatic cord is to be brought through at the highest point that it can be made to reach with moderate traction. Usually, it emerges at about the point where it would perforate the abdominal wall by Halsted's method.

By this operation the muscular wall of the abdomen is not weakened by any incision except that through the aponeurosis. The cord is entirely diverted from the old canal which is obliterated by stitches. The new canal pursues an upward and outward course through the abdominal wall, which, as I have pointed out above, seems to have decided advantages over the canal running downwards and inwards; and it would seem possible, too, that this method of closure would afford a canal of greater strength than the short, straight one afforded by Halsted's operation.

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[1] Since writing the above I have heard from Dr. J. H. Harte, of Philadelphia, that he has carried out this plan in about fifty cases, with entire satisfaction as far as the immediate result went.

FEMORAL HERNIA.

The difficulties attending the radical cure of femoral hernia arise from the shortness of the canal, from the proximity of the femoral vein, which interferes with the extensive placing of stitches about the femoral ring, and, lastly, from the fact that it is made up of tendinous structures that do not readily adhere by a permanent union when sutured.

The healing together of the fibrous walls of the canal is made more difficult by the necessary tension of the stitches pulling upon rigid portions of the fascia and ligaments. This tension is not great enough to prevent the approximation of the walls of the canal, as is shown by the very complete closure which Dr. Cushing[2] obtained by his double method of suturing; but when rigid tissues are pulled together in this way, it is well known that the sutures are apt to cut through quickly.

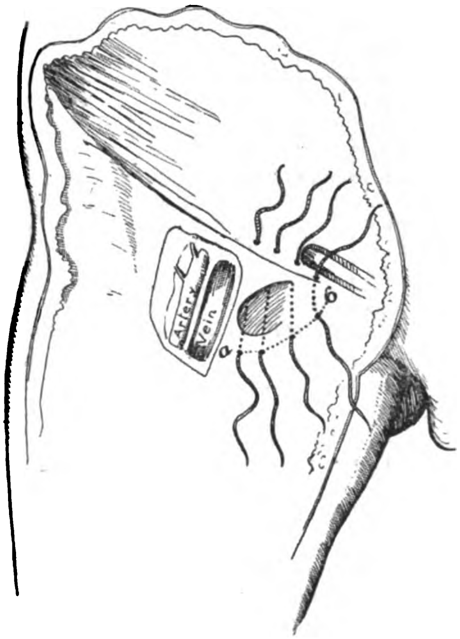

Fig. 1.

The curved dotted line *ab* represents the line of incision through the fascia. The dotted parts of the sutures run beneath the fascia, and, when knotted, they lift the flap of this fascia and attach it firmly to Poupart's ligament in the manner seen in Fig. 2.

The suggestion I have to offer is that previous to applying sutures, a semicircular incision shall be made through fascia lata just beneath the saphenous opening, the saphenous vein having been previously tied and cut away. The fascia can now be separated beneath so that the lower wall of the canal can be readily drawn upward against the unyielding portions of Poupart's ligament where it can be held with buried sutures without the least tension, and the whole canal is thereby tightly closed.

The following case illustrates the benefit of this method of operating: Miss A. O'N., aged twenty-six, was seen by me in January, 1894, in consultation with Dr. Joseph Williams, of Charlestown. She had a troublesome femoral hernia which could not be kept in place by any truss which she could wear, and, which, on several occasions, had become incarcerated with symptoms of strangulation and had only been reduced with considerable difficulty. Radical operation for its cure was advised and consented to. This was done January 29, 1894.

The sac of the hernia was pulled down, and tied off on a level with the peritoneal cavity. In order to allow of the approximation of the walls of the canal without tension, the pubic portion of the fascia lata, just beneath the saphenous opening, was incised. Stitches of silkworm-gut were then passed deeply through the lower wall of the canal coming out beneath this flap of the fascia lata so as to hold it up firmly against Poupart's ligament. This completely obliterated the canal. The skin was then united by another row of interrupted sutures.

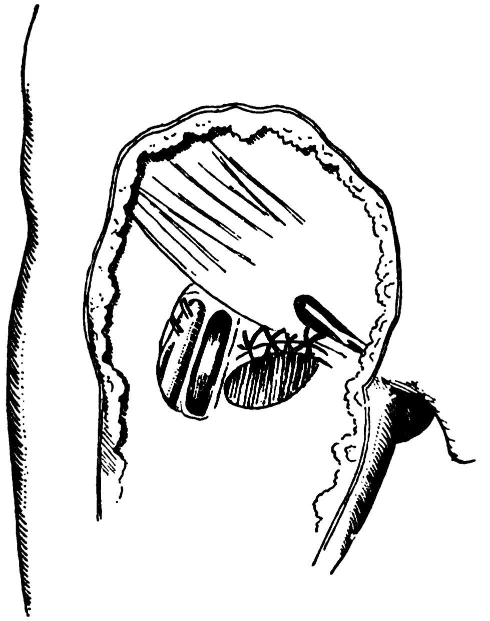

Fig. 2.

This diagram shows the manner in which the flap of fascia is pulled up against Poupart's ligament. Through the opening left below where the sutures are knotted, the fibres of the pectineus and the tendon of the adductor longus come in view. The surface of the muscle uncovered is so small and is so near to its attachment, that there would seem to be little danger of hernia of the muscle through this opening in its sheath.

Healing was by first intention; but about a month later a little abscess formed at the seat of operation, and, breaking, left a small fistulous opening. This was doubtless due to the irritation of the silkworm-gut. The suture material that I prefer is kangaroo or whale tendon, and this is the only case in which I have used silkworm-gut. I did so in this case hoping to have the support of the stitches for a longer time than with any of the more absorbable materials. I saw Miss O'N. a year later. She had still a very minute discharging sinus, which gave her little or no annoyance and had no sign of any return of the hernia.

Medical Men as Cabinet Ministers. — The new French Ministry includes three representatives of the medical profession. M. Berthelot, the Minister for Foreign Affairs, M. Viger, the Minister of Agriculture, and M. Combes, Minister of Public Instruction, are Doctors of Medicine.

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[2] Boston Medical and Surgical Journal, December 6, 1888.

Clinical Department.

A CASE OF TRICHINOSIS: DEATH, AUTOPSY.

BY EDGAR GARCEAU, M.D.,
Surgeon to Out-Patients Free Hospital for Women, Boston.

O. R., a German thirty years old, an engineer in a brewery, was a married man of strong physique. In the spring of 1892, while at a sort of picnic he ate some raw smoked ham. Many of his friends who also ate some of the same ham were taken violently ill the day after, with severe vomiting and purging, but they all eventually recovered. He himself was not taken ill at once, which fact he thought was accounted for because he ate only a very small piece. For two weeks afterwards, however, he was not himself. He felt miserable; his appetite was gone; he had backache and pains in the limbs; was weak and listless and disinclined to work.

As these symptoms increased and as he began to feel feverish, he sent for me (April 12th). This was exactly two weeks after eating the ham. He mentioned the circumstance particularly because he had learned of the illness of his friends, and was afraid that he might have been "poisoned" also. He was very restless, and had not slept for three nights. There was no great pain anywhere, but the muscles of the calves of his legs and of the arms and back were sore and lame. He could, however, move them about freely without much inconvenience. There was some sensitiveness to light, and it hurt him a little to move his eyes. The bowels had been regular, and there had been no symptoms of intestinal irritation. The mind was anxious. On examination a few red spots were seen on the abdomen, which disappeared on pressure; the bowels were soft and not tender and there was no gurgling; the spleen was of normal size; the pulse was somewhat dicrotic, and its rate, 120; temperature, 103.5°; face, red; eyes, bulging in the sockets, and the conjunctivæ red and swollen and raised above the level of the corneæ, giving the latter a punched-out appearance.

The next day, April 13th, he was worse. He had not slept at all. There had been three very loose movements from the bowels, watery and of pea-soup consistency, and odorless. The pain in the muscles had increased, and motion began to be painful. His face was livid; the pulse, 130; temperature, 104.5°. He was very restless, and insisted on getting some sleep. There had been some vomiting.

On April 14th there was a slight improvement. He had slept a little and the temperature had dropped; there was less pain in the limbs, and there had been profuse sweating. On the whole he looked brighter. The loose stools continued. The eyes were still bulging, but were not so sensitive to light. In the afternoon there was some vomiting and also some coughing. The voice also began to get a little husky. Temperature, 104°. Towards evening, after giving a subcutaneous injection of morphine, he dozed a little.

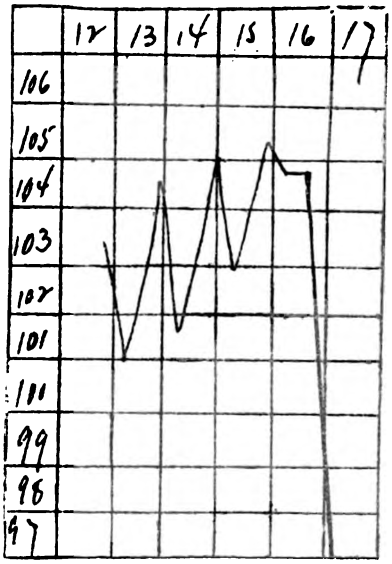
Dr. P. O'M. Edson was now called in consultation. He thought the diagnosis lay between typhoid fever and trichinosis, with the presumption in favor of the former disease for the following reasons: (1) the prodromata of malaise, backache, pain in the limbs, uneasiness; (2) the sleeplessness; (3) the gradually rising fever; (4) the characteristic typhoid dejections; (5) the rose spots. But, on the other hand, trichinosis is suggested by (1) the well-marked history of severe illness in others who ate the same ham; (2) the ocular and laryngeal symptoms.

April 15th. Much the same. The pains are more severe. Mind is clear.

April 16th. Much worse. Voice is now husky and cracked. Pulse very weak and somewhat irregular. Morphine has to be given freely to control the pains in the muscles which have become intolerable. The disease looks more like trichinosis.

April 17th. Completely collapsed. He died in the afternoon.

The treatment was merely palliative. Narcotics were used with great freedom, and controlled pain only moderately. Stimulation was pushed to the utmost limit.



A partial autopsy was allowed. An incision was made over the muscles of the calf of the leg and a small portion of muscular tissue examined. No difficulty was experienced in finding the characteristic trichinæ.

This case was interesting from its rarity. While it was perfectly typical, yet at the same time, on account of its rarity and its great resemblance to typhoid fever, the diagnosis was masked for a considerable while. Towards the end, however, there was little doubt about its nature.

To sum up, we have in the first place the history of the case and the period of incubation, two weeks, during which time the trichinæ were migrating from the intestines to the muscles. If the patient had eaten a good deal of ham it is probable that he would have escaped as the others did, by the violent vomiting and purging. This suggests that a cathartic be given in these doubtful cases to clear out the trichinæ. In this patient's case all the trichinæ swallowed had a chance to propagate, and the number propagated may be inferred when it is said that a single female trichina may produce more than a thousand embryos. The next symptom somewhat characteristic of trichinosis was the fever; it was high and had marked remissions. The severe muscular pains are also characteristic, but still it is by no means rare to meet with the same pains in typhoid. Strongly suggestive of trichinosis was the implication of the laryngeal muscles as evidenced by the husky voice; this appeared late in the disease. The ocular symptoms were still more suggestive, and were noticed early in the disease. The edema of the conjunctivæ was very marked. It generally affects the eyelids, but in this case, curiously enough, the conjunctivæ were affected. It was this symptom which first aroused my suspicions as to the nature of the disease. The intestinal symptoms deserve mention. Purging is usually of common occurrence in trichinosis. The insomnia and rose spots need not be considered; they are met with in both diseases. The normal spleen furnished valuable negative evidence. Taken as a whole, these symptoms are, in connection with the prodromata, very much similar to those of typhoid; and, indeed, it was not until I had made the autopsy and had seen the trichinæ that I felt absolutely sure that the disease was not typhoid but trichinosis.

Fourteen per cent. of the Massachusetts hogs killed for food are infested with trichinæ. Of the Western animals which feed in the fields and have, therefore, relatively clean food only two per cent. are infested. The examination of these animals in the Massachusetts pork-packing establishments is very rigid and is regulated by law, so that the inspected pork may be said to be fairly safe. In this case the trichinosis was caused by eating ham which was not inspected; it was from an animal which was killed by a local butcher. As the ham was not boiled but merely smoked, it is not surprising that it caused trichinosis.

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THE NEW SURGICAL SPLINTING.

A FURTHER REPORT OF CASES EXEMPLIFYING IT.

BY EDWARD A. TRACY, M.D., BOSTON,
Fellow of the Massachusetts Medical Society.

AT the Baltimore meeting of the American Medical Society last May, I reported cases illustrating the efficiency of four new splint forms devised by me: a latero-posterior splint for knee-joint fixation, a splint for hip-joint fixation, an external lateral elbow-splint, and a splint for the treatment of rib injuries. All of them were moulded on the patients; the material used being that devised by me for surgical splints and spinal jackets, and fully described in an original paper read before the Pan-American Medical Congress in Washington, 1893. Concisely defined, the new splint material is crushed wood-fibre rolled in a rugose manner, and in which layers of a loosely-meshed fabric is embedded during the rolling process. It is manufactured by the American Wood-Pulp Company, Boston. This material gives a most efficient and scientific surgical splinting, as demonstrated by the splints constructed from it for a variety of surgical injuries by brother practitioners and myself.

I say "a most efficient and scientific surgical splinting" for the reason that each splint is moulded upon the patient, and meets all the indications of the individual case at the will of the surgeon, who, in fact, creates the splint.

A number of such splints demonstrating this statement were shown at the annual meeting of the Massachusetts Medical Society in June last; at the Baltimore meeting of the American Medical Association last May; at the meeting of the Southwestern Arkansas Medical Society, through the courtesy of Dr. Wilson; and to the Philadelphia Academy of Surgery (in the beginning of the year), through the kindness of Dr. Wm. J. Taylor. In this paper I shall report briefly three cases for which splinting was devised.

CASE I. The first is a case of fractured humerus, at the junction of middle and upper third, communicated to me orally by Dr. M. F. Gavin (surgeon at Boston City Hospital).

The case was in Dr. Gavin's private practice, and the splinting was devised and applied by him. The details of the progress in this case I do not recall, except that the result was excellent. The splinting consisted of a shoulder-cap extending to the elbow, and a small splint moulded over the inner surface of the arm, its middle laying over the seat of the fracture. A diagram of the shoulder-cap, indicating its construction, is shown in Fig. 1.

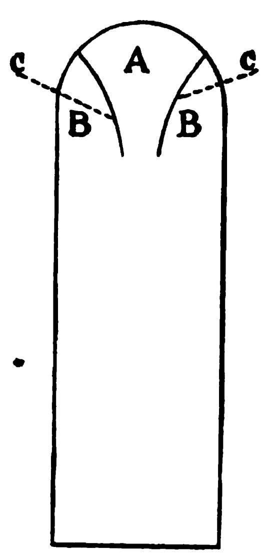

FIG. 1.

Diagram of shoulder-cap. Explanation: *cc* are the lines of incision in the splint-blank, starting from the upper part of the cap and converging towards the portion made to lie over the head of the humerus. After moistening the splint-blank, the part *A* is moulded over the shoulder and the parts *BB* are moulded over the part *A* and the arm. After drying — which can take place upon the arm — the moulded splint retains its form, because of the rigidity of the splint material.

The splinting was made from my wood-fibre splint material having a thickness of two millimetres. It was moistened with water and allowed to dry upon the arm. The process of splinting occupied but a few minutes. The splints were omitted after three weeks' application. This case illustrates a very simple method of making a shoulder-cap which for efficiency, lightness and cheapness I believe cannot be excelled.

The remaining cases, a compound fracture of the forefinger, and compound fracture of the toes, were treated by the writer; the splinting is original.

CASE II. T. L., laborer, entered my office with distal phalanx and tissues of left forefinger covering it crushed by machinery. The finger was dressed antiseptically, and a splint blank cut from a thin sheet of the wood-fibre splinting. It was cut so as to cover the forefinger except its internal, that is, ulnar aspect, and also sufficient of the dorsum of the hand to immobilize the proximal joint of the finger and also to secure the splint's better retention by a bandage over the hand. The accurate shape for the splint blank was gotten by cutting a paper pattern so as to cover the parts as described, and by following this pattern for a guide when cutting the blank. The splint-blank was moistened with a solution of potassium silicate (the ordinary pharmacal solution, further diluted with its bulk of water).

The splint was omitted after twelve days. Result, excellent.

CASE III. F. P., with crushed toes, treated by me at the Boston City Hospital, through the courtesy of Dr. Paul Thorndike. The larger toes of the patient's right foot had been crushed. After thorough antiseptic treatment it was deemed desirable to immobilize the toes. This was readily accomplished by constructing a somewhat slipper-shaped splint. The pattern for the splint blank was cut so as to extend from above the heel along the sole of the foot to about two inches beyond the toes; laterally the pattern extended on each side about three inches beyond the outline of the anterior half of the sole. The splint blank was cut in accordance with this pattern from a sheet of the splint material two millimetres thick. The splint blank was moistened with a solution of potassium silicate, and moulded over the foot after the toes had been covered with a moist antiseptic dressing. The lateral projections of the blank were folded over and moulded upon the anterior half of the foot, while the projection in front of the toes was brought (lifted) upwards and folded over the others. The moulded splint was removed, and dried over a gas jet. Before applying it permanently a piece of oiled paper was folded over the moist antiseptic dressing, and it effectually prevented the moisture from softening the splint.

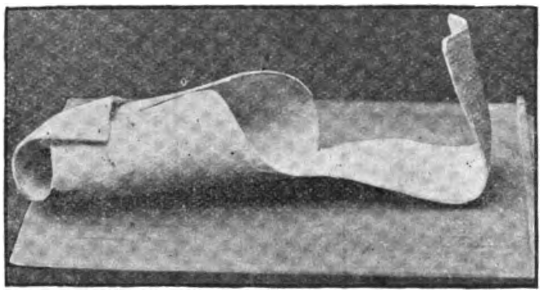

FIG. 2.

The natural resiliency of the splint material permitted the piece moulded over the heel to be bent downwards, so that the splint was readily drawn over the toes on applying it and as readily removed whenever the toes required dressing. This splint immobilized the toes effectually, and gave comfort to the patient by protecting the foot from injury while healing took place. It can readily be understood that this splint form would serve as well for fixation of the metatarsal bones. The splint is illustrated in Fig. 2, from a photograph of the splint.

CONTAMINATED OYSTERS.—About twelve ladies and gentlemen who attended a ball in Sterling County, England, on October 1st, have since been seized with typhoid fever, the result, it is alleged, of eating contaminated oysters, and three of the company have died.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

TANNIGEN.

SUBSTANCES now in common use as astringents, such as tannin and astringent salts, are disagreeable to take and begin to exert their action as soon as they reach the mouth. Professor Hans Meyer, of Marburg, has undertaken the task to make a compound of tannin which should have little or no action while in the mouth or stomach, but should become active in the intestine. The substance which he has succeeded in making synthetically and which is now manufactured he has called tannigen. It is a yellowish powder without taste or odor. It is soluble in alcohol in a solution of phosphate of sodium or of borax. Slightly alkaline solutions containing phosphate of soda have an astringent taste and other astringent properties. His theory of its action is that though insoluble in the stomach it dissolves slowly in the alkaline fluids of the intestines, and thus is capable of exerting an astringent action along the whole length of the small and large intestine. Experiments on animals showed that the substance was without harmful action and it was given to Professor Müller by his colleague for clinical trial and the anticipation that it would prove useful was confirmed. The dose used was 0.2 to 0.5 though it was harmless in doses even up to 3. It was found serviceable as an astringent in diarrhea, especially in children and in the diarrhea of tuberculosis. [A limited trial of it leads me to think that we probably have in tannigen an excellent astringent where such action is desired upon the intestinal mucous membrane. F. H. W.]

A RATIONAL DIABETIC FLOUR.

Dr. Heinrich Stern, of New York,[1] discusses, in *Food and Sanitation* (August 17th), the importance of suitable breadstuffs for use in diabetes, and states that the complete and sudden deprivation of breadstuffs undoubtedly produces more harm in a diabetic patient than a moderate use of that article. It is alleged that the so-called diabetic flours are free or nearly so from carbohydrates; but Dr. Stern says that all these flours contain large quantities of starch, and in fact if a complete extraction of the starchy principle could be accomplished, there would be very little left to make a satisfactory article of food.

After a series of experiments the author came to the conclusion that an inexpensive food and one containing only a small percentage of carbohydrates could be obtained from the peanut. Peanut meal, as known in commerce, contains about 52 per cent. of protein, 8 per cent. of fat and 27 per cent. of carbohydrates, and is therefore a most concentrated and valuable animal food. It is of a quite agreeable taste and not very hard to digest.

Dr. Stern describes his method of preparing what he calls the diabetic peanut flour, in which the smell and taste characteristic of the peanut are overcome. He has made use of this flour in different ways, the most simple of which is in the form of porridge, milk being added. Bread and biscuit can also be made from it, but he thinks the German pancake the nicest and most easily digestible form in which to use it.

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[1] New York Medical Journal, September 14, 1895.

The author has used the flour with four diabetics and a number of other patients. Its use was a failure at the outset with the first diabetic; but a more careful and rational preparation of the flour and its employment in smaller quantities increased its digestibility, and to-day this patient is in as good a state of health as circumstances permit. The other three patients throve well on this flour, the German pancake being the usual form in which they employ it.

THE TREATMENT OF DIPHTHERIA BY ANTITOXIN.

Dr. William H. Welch begins his most noteworthy article on this subject by a brief historical introduction, and then says that there are two prominent theories as to the mode of action of the diphtheria antitoxin. The one may be called the chemical and the other the vital theory. The chemical theory is that the antitoxin directly neutralizes in a chemical sense the toxins. This seemed to be the natural interpretation of the fact that the injection into susceptible animals of a mixture in suitable proportion of the antitoxin and the toxin is harmless; but Buchner and Roux have shown that this earlier view is incorrect, and that by selecting animals of greater susceptibility or by increasing the natural susceptibility of an animal, the presence of active toxin in the mixture can still be demonstrated. The experimental evidence, therefore, is in favor of the other theory, namely, that the antitoxin acts through the agency of the living body, and probably in the sense that it renders the cells tolerant of the poison. The results of the treatment of human diphtheria with antitoxin speak also in favor of this vital theory.

Antitoxic serum exerts no bactericidal effect upon the diphtheria bacillus. Virulent bacilli may persist in the throat days and even weeks after recovery following injection of antitoxin.

One of the most important characters of antitoxin is that it requires a definite quantity of this substance to neutralize the effects of a definite quantity of toxin. In animals the curative dose of antitoxin stands in a definite quantitative relation to the size and susceptibility of the individual and to the amount and intensity of the poison in the system. We have no precise method of determining how much and how virulent the poison may be in a given case of human diphtheria, nor how susceptible to the toxin the patient may be. The dosage of antitoxin, therefore, in human diphtheria is empirical, the main factors determining it being the age of the patient, the assumed duration of the disease up to the time of administering the remedy, and the apparent severity of the disease. As the healing serum is expensive and is capable of inducing unpleasant symptoms, it is desirable not to give an excessive quantity. Under these circumstances it may readily happen that an insufficient dose is given, and that the administration must be repeated. This matter is spoken of to indicate that because a patient may have received a dose, or even two or more doses of antitoxin, furnishes no absolute guarantee that a quantity of antitoxin adequate to neutralize the effects of the toxin has been given. It is now known that in the early period of its use entirely insufficient doses were given.

Both experiments on animals and clinical experiments demonstrate that the earlier antitoxic serum is administered after the inception of the disease, the better are the chances of recovery. The evidence is conclusive that the superiority of serum treatment over all other methods is most strikingly manifested in the results of the cases in which the antitoxin is given not later than the third day of the disease. Although in many cases the treatment is beneficial when the antitoxin is administered in larger doses at a later period of the disease, the importance of beginning the treatment at the earliest possible date, without waiting to determine by cultures whether or not the Löffler bacillus is present, cannot be too strongly emphasized.

The Löffler bacillus has been found in healthy throats, although only very exceptionally, unless the person has been exposed to diphtheria. This same bacillus may cause all grades of inflammation of the throat, from a mild erythematous angina to the gravest pseudo-membranous inflammation. There has resulted a conflict, not yet settled, between the clinical and the bacteriological diagnosis of diphtheria. The conditions pertaining to the diphtheria bacillus are in no way different from those relating to many other pathogenic bacteria, as for example, the pneumococcus, the streptococcus, the cholera bacillus, and even the tubercle bacillus, all of which may be found on healthy mucous membranes and may exert their pathogenic activity with all degrees of intensity. It would, of course, be absurd to say that a person has diphtheria because Löffler bacilli were found in his healthy throat, just as it would be equally ridiculous to consider a person infected with the pneumococcus or streptococcus, when these latter bacteria are present under similar conditions; but it is no less absurd to limit the application of the term "diphtheria" only to those higher degrees of pathogenic action of the Löffler bacillus characterized by spreading pseudo-membranous inflammations and general toxemia.

The statement is sometimes made, that twenty-five to thirty per cent., or even a larger percentage of the clinical diphtherias are not genuine diphtheria in the bacteriological sense. These figures are based upon the bacteriological examination of large numbers of cases in which there was simply more or less suspicion of diphtheria. They do not relate generally to a large number of cases presenting unmistakable anatomical and clinical characteristics of diphtheria. They are derived from the routine examinations, for boards of health and children's hospitals, of suspected cases of diphtheria. When one considers that in some cases of diphtheria repeated, painstaking examination, microscopical and cultural, by a skilled bacteriologist, is required for the detection of the diphtheria bacillus, it is evident that less reliance is to be placed upon these statistics *en gros* than upon many smaller series reported by bacteriological experts. Of the statistics of the latter character there are many which show that in the series of cases examined (including in each series reported from a dozen to over three hundred cases) from ninety to one hundred per cent. of the clinical diphtherias are due to the Löffler bacillus. The experience in Baltimore has been that not over five per cent. of the cases which the clinician would confidently diagnose as diphtheria are false diphtheria or diphtheroid. These latter figures relate, of course, to primary diphtheria.

There is an important difference between experimental diphtheria and many cases of human diphtheria, a difference of great significance in determining the scope of efficiency of treatment by antitoxic serum. Experimental diphtheria is a pure, uncomplicated infection in which only the diphtheria bacillus and its toxin are concerned. On the other hand, in many cases of human diphtheria there are complications and mixed infections due to other micro-organisms, against which, when fully developed, the diphtheria antitoxin is powerless. The most common and dangerous complicating micro-organism is the streptococcus pyogenes. Without doubt the remedial rôle of diphtheria antitoxin is materially restricted by its inability to combat developed streptococcus sepsis, broncho-pneumonia and other complications referable to secondary infection, or to stop impending suffocation by immediate removal of mechanical obstacles in the form of false membranes in the air-passages; but the antitoxic serum is the most powerful agent which we possess to prevent the development of these complications and secondary infection. The timely administration of the healing serum, by antagonizing the effects of the Löffler bacillus, antagonizes in large part the causes of the increased susceptibility to secondary infections and thus greatly lessens the frequency of their occurrence.

In considering the obstacles in the way of cure of diphtheria by antitoxin, the self-evident fact should not be forgotten that this remedy cannot restore cell life which has already been seriously damaged by the action of the diphtheria bacillus or its poison.

Concerning the efficacy of the antitoxic treatment the evidence is of two kinds: first, the general impression of clinicians who have had opportunity to observe the effects of antitoxin administered in a number of cases of diphtheria; and second, the fatality statistics of cases treated with antitoxin. The published testimony of those who have had the largest opportunity to study the therapeutic effects of antitoxin is overwhelmingly in its favor; such men as Baginsky, Heubner, von Widerhofer, von Ranke, Ganghofner, Escherich, Bokai, the physicians of the Hôpital des Enfants Malades and Hôpital Trousseau in Paris, speak of it in high terms. These observers have reported already in detail over 2,800 cases of diphtheria treated with antitoxin.

It is to be expected that there should be wide diversity in the percentage of cures in reports of different observers when the varied character of the cases treated and the importance of the early administration is considered.

If antitoxin really exerts any specific curative action in diphtheria this must be apparent in the figures of fatality statistics of this disease. The possible fallacies of interpretation, belonging to fatality statistics in general, apply in no small measure to those of diphtheria. The case mortality from diphtheria varies within wide limits, according to the more or less severe character of the prevailing epidemic, according to the season of the year, the age, the method of treatment in cities and country districts, etc. Statistics of case mortality from hospital practice will differ widely from those of private practice, and each of these will differ widely from the general case mortality returns from cities. Nor does each of these three classes of statistics represent a uniform material.

In about ten months, more or less, definite reports of the results of treatment in at least 15,000 cases have been published. Eighty-two reports have been collected from 80 different sources containing 7,166 cases; these are presented in a table (I) and are analyzed. The reports are of unequal value; some are based upon the bacteriological control of the clinical diagnosis, others upon the clinical diagnosis uncontrolled by bacteriological examination. Although only the former can lay claim to entire accuracy, the benefits of antitoxic treatment are clearly apparent in the latter.

It appears from Table I, that, of 7,166 patients with diphtheria treated with antitoxin, 1,239 (or 17.3 per cent.) died. Among these cases are included many treated during the early period with entirely insufficient doses. The natural interpretation of the statistics in over 7,000 cases, of which at least five-sixths are from hospital practice, treated with antitoxin (an extraordinarily low percentage of deaths for this class of cases, and showing an apparent reduction in fatality of from 50 to 60 per cent., by the use of antitoxin), is that antitoxin exerts a specific curative power over diphtheria.

It has been claimed that the observations on which this statistical evidence was based were made during the prevalence of an unusually mild diphtheria; but no proof has been brought forward to support this opinion in any large measure. In a few cases this may in part be the explanation.

Another criticism is that in the hospitals where the serum treatment is carried out a proportionally larger number of cases are received now than formerly in the earlier stages of diphtheria; but if all due allowance is made for this possible increase — and some allowance must be made — this factor is still altogether inadequate to explain the great reduction in fatality of diphtheria treated with antitoxin.

A third criticism, namely, that the bacterial test operates in favor of a low mortality in antitoxin statistics, has already been discussed.

With all possible allowance made for the above-mentioned criticisms, he believes that the statistics collected show that antitoxin is a specific curative agent for diphtheria; and he goes over the ground very carefully and in a good deal of detail, taking the statistics from private as well as hospital practice. He shows the value of this treatment in cases requiring tracheotomy or intubation and likewise the substitution of intubation for tracheotomy in a larger and larger proportion of the laryngeal diphtherias requiring operative interference when treated by the serum and the shortening of the period during which the tube or tracheal canula is required to be kept in the air-passage.

Behring claims that no death will occur from diphtheria if antitoxin is injected in sufficient dose at the beginning of the disease, and that the fatality will fall under five per cent. if the treatment is begun in a proper manner before the third day of the disease. Dr. Welch gives tables showing the mortality according to the day of the disease in which antitoxin was injected, and adds that it is noteworthy that in 814 cases in which treatment was begun before the third day the percentage of deaths was only 5.5 per cent, and if the doubtful deaths attributed to the first day be excluded the percentage falls a trifle short of five. If, furthermore, allowance is made for the fact that the assigned duration of the disease can scarcely be shorter but may readily be longer than the actual duration, then the tabulation of 1,702 cases of diphtheria according to the day of beginning treatment verifies Behring's original prediction; but Dr. Welch thinks it unjustifiable from so small a number of cases and from material of the kind composing the table to draw any definite conclusions as to the exact percentages of deaths according to the date of beginning treatment.

The percentage of deaths according to the table is much lower in cases where treatment is begun on the first and second days than when begun on the third and fourth days; but it is not to be inferred from these results that antitoxin may not be beneficial when administered after the third and fourth days of the disease.

Most writers approve the continuance of such local and general treatment as has hitherto been found to be useful, but recommend the avoidance of all irritating and caustic local applications.

The injection of the serum may be followed in a few hours by local pain, swelling and redness, but there is no danger of abscess formation if the serum is uncontaminated and proper antiseptic precautions are taken.

In twenty-four to forty-eight hours after the injection, the general condition of the patient is remarkably improved in the great majority of those patients who are in a condition to be benefited at all by antitoxin. In the favorable cases, the local diphtheritic process is arrested, usually within the first twenty-four hours after the injection. Membrane may appear upon spots previously inflamed and invaded by the bacilli, but otherwise there is no extension of the membrane in the majority of the cases benefited. The membrane may disappear by rapid separation or by gradual softening. Sometimes it persists for several days after disappearance of all other local disturbance. Large membranous casts are coughed up from the larynx, trachea and bronchi under the serum treatment more frequently than under former methods. The rapid separation of the membrane in the lower air-passages may cause sudden increase of stenotic symptoms.

The most uncertainty prevails as to the influence of antitoxin in preventing the three most important complications or sequelæ of diphtheria — nephritis, heart-failure and paralysis. The weight of evidence is that genuine nephritis is far less common in cases treated by antitoxin sufficiently early than under other methods of treatment, but it is questionable whether albuminuria is less common.

Many writers emphasize the favorable influence of antitoxin on the heart, but some have observed that with decided improvement in all other symptoms the force of the heart may still remain weak and occasion anxiety.

Post-diphtheritic paralysis may occur in cases treated with serum as early as the second or third day of the disease. Whether they occur in cases treated within the first twenty-four hours is uncertain.

It is apparent from what has been said that antitoxin is most strikingly beneficial in progressive fibrinous diphtheria, and especially in the prevention and cure of laryngeal diphtheria. In septic diphtheria the serum treatment is of little avail.

Antitoxin may produce unpleasant effects, but these do not involve danger to the patient. They are in all probability referable to the serum as such and not to the healing so-called antitoxic substance contained in the serum. The most common undesired effect is some form of exanthem, usually erythema and urticaria, sometimes an eruption like measles or scarlatinal rash.

There have been a few cases reported in which the writers without any satisfactory evidence whatever, have referred the death of the patient to the use of the serum. The essential harmlessness of the serum has been demonstrated by over one hundred thousand injections, and if future investigations should show that through some idiosyncrasy on the part of the patient death ever is attributable to the injection of the serum, this would probably count for about as much as the rare deaths from the use of ether or chloroform.

The principal conclusion Dr. Welch draws from his paper is that the study of the results of the treatment of over 7,000 cases of diphtheria by antitoxin demonstrates beyond all reasonable doubt that anti-diphtheritic serum is a specific curative agent for diphtheria, surpassing in its efficacy all other known methods of treatment for this disease. It is the duty of the physician to use it.

Better results may be expected a second year, and improvements in the method of preparation and preservation of the serum; and possibly the separation of the healing substance, at least from other ingredients that produce undesired effects may likewise be expected.

The discovery of the healing serum is entirely the result of laboratory work; and it should be brought home to those whose philozoic sentiments outweigh sentiments of true philanthropy, that these discoveries which have led to the saving of untold thousands of human lives have been gained by the sacrifice of the lives of thousands of animals, and by no possibility could have been made without experimentation upon animals.

THE DECLINE OF HYPNOTISM.[2]

The *Lancet* says there seem many signs that we are witnessing the decay of hypnotism. Its claim to take rank, not as a curious psychological phenomenon, but as a recognized branch of therapeutics, is now pressed with much less insistence and sincerity than a few years ago. While admitting that modern hypnotism presented some new developments and refinements, we have always maintained that in essence it was identical with the mesmerism, Braidism, animal magnetism and electro-biology of former times, and that in due course it would be found to be barren, if not noxious, in the field of medicine. The dangers of the proposed new departure were evident and grave, the advantages at best problematical, at worst illusory and deceptive. Let us recall some of the salient features of the controversy.

First, are hypnotic phenomena normal or abnormal, physiological or pathological? It has been alleged that the phenomena were perfectly normal and some of the apostles of the movement have asserted that more than ordinary strength and balance of mind were necessary to constitute any one a thoroughly good subject for hypnotism. It was said that the power of sustained concentration of attention was the most essential point in securing the success of the experiments and that such a power was the very best antithesis of hysteria or morbid neurosis; on the other hand, the more general and gradually prevailing opinion has been that the hypnotic trance and all the curious attendant phenomena were of the nature of disease, and showed a mind not abnormally strong or even normally sane, but to a greater or less extent temporarily off its balance. This latter view is in our judgment most in accord with the facts and most consistent with theory. Ordinary experience of life teaches us that one of the most potent forces in human nature is the love of notoriety and the desire to become the centre of interested attention. Granted an atmosphere of excited interest and a strong expectancy of certain results on the part of subjects and operators, and the most astonishing effects can easily be produced. Again, if it is of the essence of hypnotism that the subject should yield his will to that of another individual, we think such a condition much more likely to be associated with mental weakness than with mental strength. The most probable theory of the causation of hypnosis has always seemed to us the view that was put forward by Heidenhain and other good physiologists, namely, that the hypnotic trance is the result of an inhibition of some portions of the cerebral substance, the remaining portions acting abnormally and giving an extraordinary response to ordinary stimuli.

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[2] New York Medical Journal, July 13, 1895.

Second, granting that hypnosis is real and can be evoked according to definite rules, is it capable of being turned to useful account in the field of therapeutics? Strong claims were put forward for hypnotism as an anesthetic, an analgesic and a nerve stimulant. There was a stage in the annals of this curious history where even grave organic maladies, for example, hemiplegia, Bell's paralysis, etc., were alleged to be submissive to hypnotism; but by degrees one claim only was insisted upon, namely, that hypnotism was a potent remedy for 'functional' nervous affections. These maladies constitute the most illusive of all fields for therapeutic experiment. The victim of functional nerve disorder not infrequently gets well with any treatment or no treatment. Above all it is clear that any strong impression on the nervous system, whether produced accidentally or by deliberate therapeutic endeavor, frequently results in the cure of such cases. Hypnotism is one way of producing such an impression; and its good effects might be freely admitted if there was no reason to suspect that the cure might be worse than the disease. To drive out neurasthenia by inducing the hypnotic state is a procedure fraught with so much peril, both on the moral and physical side, that it can only be undertaken with grave apprehension. The broken-down nervous systems that form the bulk of neurasthenic cases are bad material for doubtful psychical experiments. Rather should we commend in such cases the old and well-tried methods of treatment by rest, change, fresh air, diet, tonics, modifications of unwholesome environment, suitable occupation, and recreation. These methods often succeed, and it can at least be said that their failure does not make the last case of the patient worse than the first.

Hypnotism is undoubtedly worthy of study, but we suspect that more and more it will be handed over to the psychologist, perhaps sometimes to the alienist, and that its interest for the practical physician will steadily wane.

Another Post-graduate School. — A post-graduate school has recently been established in Washington, D. C. According to the prospectus there is no post-graduate school south of New York and Philadelphia. Among the faculty, according to the *National Medical Review*, are Dr. Samuel C. Burey, Dr. W. W. Johnston, and Dr. J. Ford Thompson.

Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

TWENTIETH ANNUAL MEETING, BALTIMORE, MAY 28, 29 AND 30, 1895.

(Concluded from No. 20, page 496.)

SPECIMENS REMOVED BY VAGINAL AND ABDOMINAL HYSTERECTOMY.

Dr. R. Stansbury Sutton, of Pittsburgh, presented a number of smaller uterine fibroids removed with the uterus *per vaginam*, and some much larger removed by suprapubic hysterectomy, the entire number of cases so operated upon from the 1st of November, 1894, to the 1st of May, 1895, having been 12, with 12 recoveries. In one of the cases the appendages had been removed twenty months previously, but the woman had not been cured; and he might say that in this and several of the other cases the only procedure which offered a cure was total castration. Dr. Sutton had removed the uterus, with fibroid and fetus, in three cases, all of the women recovering. He was always willing to sacrifice the life of the fetus in order to save that of the mother.

Dr. Montgomery, of Philadelphia, thought the complication of fistula which arose nine times in Dr. Jacobs's list was fully offset by this or other accidents occurring in laparotomy. He would not go as far as Dr. Jacobs and advocate total castration in every case of bilateral disease of the adnexa, since in some instances conservative measures would be successful. He did not believe, either, that in every case of ectopic gestation the appendages on both sides were diseased and called for hysterectomy. He believed in vaginal hysterectomy for malignant disease and fibroids, although in the latter condition hysterectomy might not be necessary at all.

Dr. J. M. Baldy, of Philadelphia, upheld laparotomy *versus* vaginal hysterectomy. He would admit hernia as an objection to the abdominal incision; but it rarely occurred, and was not to be compared with various forms of fistula encountered nine times by Dr. Jacobs, and which had led him to resort to two of the most dangerous operations in surgery, namely, intestinal anastomosis and nephrectomy. He claimed that the mortality was in favor of the abdominal route, for Dr. Jacobs had given 4.6 per cent. for vaginal castration, while he could quote 224 operations through the abdomen by such men as Polk, Pryor, Krug, Penrose, Kelly, and himself, with a mortality of about one-half, or 2.7 per cent.

Dr. W. M. Polk, of New York, claimed that even conservative work on the appendages could be done through the vagina, provided the incision were made in the anterior cul-de-sac where the appendages could be drawn down within easy reach. It might be questioned whether the appendages should be sacrificed in all cases of hydrosalpinx and hematosalpinx, but not in pus collections. Inasmuch as the uterus was no longer of service without the appendages, many believed it should also be removed. The cases could be divided into two classes: (1) Those in which there were few adhesions in connection with diseased appendages, and vaginal hysterectomy was comparatively easy; (2) Those in which there were pus sacs and wide adhesions, and the operation was very difficult.

In the latter class of cases drainage could be established through the vagina, and the more radical operation be postponed. In puerperal cases, where operative interference was indicated, the vaginal route would be attended by less shock, a very important point in women suffering from this condition. He appreciated very highly the suggestion of Dr. Henrotin to make vaginal incision and drainage a prophylactic measure in pelvic inflammation when done early. He differed from Dr. Jacobs in one operative step, for he preferred to use ligatures at the beginning of vaginal hysterectomy rather than clamps, leaving the latter for the higher steps when they would be less in the way.

Dr. S. C. Gordon, of Portland, Me., conceded the brilliant results claimed by Dr. Jacobs and other experts in operating from below, and he had practised that method to some extent himself, but must express his preference for the suprapubic operation. He thought one could do better by sight aided by touch than by touch alone. He thought it was objectionable to pull down the ovaries and examine them as Dr. Polk had recommended; they could not be returned to their former position if one should decide not to remove them. Then one could repair existing fistulæ much better from above.

Dr. W. Gill Wylie, of New York, said he had not performed vaginal hysterectomy in a very large number of cases, about 55, and the results had been better so far as the mortality was concerned than by suprapubic hysterectomy, there having been only one death, but he did not believe they would have been better had the cases been of a similar nature. In private practice his mortality-rate by the suprapubic method would at present hardly exceed one per cent.; even in Bellevue Hospital it would not exceed three per cent. He regarded the vaginal procedure as much more difficult where the adhesions were high, and he doubted whether he should ever adopt it in that class of cases. The future would have to decide which method would give the best results. General surgeons would probably prefer the abdominal method.

Dr. Joseph E. Janvrin, of New York, had limited most of his vaginal work to cancer of the uterus and to removal of such fibroids as did not require hysterectomy. He thought that in tubal pregnancy, if the condition were recognized early, there should be no disease in the opposite tube, and hence there could be no necessity for its removal and with it the removal of the uterus.

Dr. McGonigal, of California, maintained that it was not justifiable to remove the uterus for salpingitis without pus. Where pus existed, it was justifiable to do complete castration either from below or from above, but he had only practised the latter method. He thought it was a matter of personal judgment as to which route should be chosen. He agreed with Dr. Baldy, that fistula was much more likely to occur in operating from below, for out of 72 suprapubic hysterectomies the speaker had not had fistula of the bowel once.

Dr. William T. Lusk, of New York, thought that all were agreed as to operating from below where it was necessary to remove the uterus for cancer and for fibroids of medium size. In the case of pus tube, as long as there was a probability in a given case of its being unilateral, he would prefer to follow Dr. Polk's practice of saving the appendages on one side, together with the uterus. Regarding tubal pregnancy, he had operated upon a good many cases, and could not recall one in which the tube and ovary which had been allowed to remain had undergone disease, with the exception of one case in which carcinoma developed three years afterward quite independently of the tubal pregnancy. Not approving, then, of Dr. Jacobs's recommendation to remove the uterus in tubal pregnancy, he would prefer to operate from above.

A great deal has been said about operating from below in inflammation with supposed collection of pus. In talking to the family physician, he found this gentleman was afraid to give morphine through fear it would mask symptoms; he was afraid to give an antipyretic for the same reason; he must not apply a blister; he must not use alcohol; he must only give something with a view to killing bacteria or preventing the development of streptococci until a gynecologist could be sent for and operate on the patient. Dr. Lusk thought he should remember that in this class of cases, cases recently confined and having little afternoon temperature would, ninety-six times — he might have said ninety-nine times — in a hundred recover if let alone, whereas if we undertook an operation we assumed a great responsibility.

Dr. H. C. Coe, of New York, said he had been requested three times the last few weeks to operate through the vagina in case he should deem an operation necessary. We were no longer always at liberty to choose our route. None of the speakers had referred to supplementary hysterectomy, yet it was just here that the vaginal route had one of its chief indications, for where the appendages had been removed previously and the woman complained afterward, it was very easy to remove the uterus from below.

Dr. Ely Van de Warker, of Syracuse, thought Dr. Henrotin had done a great service in directing attention to early vaginal incision as a prophylactic measure in pelvic inflammation, and said he had reported such a case in his own paper.

Dr. Jacobs made some closing remarks in French, expressed much pleasure at his kind reception, and stated that American operators were much in advance of those in Europe in taking up new procedures. This was especially true of the vaginal method of operating in disease of the pelvic organs.

Dr. Wathen and Dr. Henrotin also made some closing remarks.

THE TREATMENT OF PUERPERAL ECLAMPSIA.

Dr. Thaddeus A. Reamy, of Cincinnati, in a paper on this subject, related about half-a-dozen cases of puerperal eclampsia which were treated successfully by large doses of Norwood's tincture of veratrum viride, or by this agent combined with morphine. Most of the patients had been treated unsuccessfully by other means before he was called. Nothing could have been more striking than the promptness with which the convulsions had been arrested as soon as the veratrum viride had had time to act upon the heart and vaso-motor system. It had been shown by Dr. Jewett, in 1887, to be one of the most potent spinal and arterial depressants. It produced general vaso-motor paralysis. The advantage of the agent went further than to arrest the convulsions, for it produced copious perspiration and diuresis and thus rid the system of the toxic ingredients producing the convulsions. The patient could take half a drachm of the tincture without danger, and he had given twenty-five minims hypodermatically. If alarming symptoms developed, they could be counteracted by morphine. It had been said that blood-letting would accomplish the purpose, but it was less effectual, was not without danger, and deprived the patient of blood which she would need afterward.

THE ULTIMATE RESULTS OF TRACHELORRHAPHY.

DR. WILLIS E. FORD, of Utica, discussed in this paper the ultimate results of trachelorrhaphy in relation to the nervous symptoms. The operation had often been done for the cure of so-called reflex nervous disorders; but the author held that the term reflex was appropriate only where the symptoms were of a spasmodic character, and that the suffering of most of these and other patients was due to a neurasthenic tendency or disorder of the general health. A well-marked nervous disorder which had become established would not be removed by trachelorrhaphy, and the operation, if it had no other definite indication, would be about as likely to aggravate the nervous state as to ameliorate it. Mental impression might work either way. Hysteria and neurasthenia were of deeper origin than peripheral irritation, or irritation of a lacerated cervix; and while the latter might require treatment, we might be disappointed in curing the patient of her nervous disorder.

The paper was discussed by **DRS. CLEVELAND, C. J. ENGLEMANN, A. F. CURRIER, S. C. GORDON, G. T. HARRISON, A. P. DUDLEY** and **HOMAN**. Drs. Dudley and Gordon at present hardly ever performed secondary trachelorrhaphy, but treated the uterus and general pelvic condition. The other gentlemen expressed appreciation of trachelorrhaphy, but it had often been abused.

THE PROPHYLAXIS AND TREATMENT OF PUERPERAL ECLAMPSIA.

DR. EDWARD P. DAVIS, of Philadelphia, read the paper. Three or four cases were related in which, as soon as nervous symptoms, headache, etc., developed, pointing to toxemia, which was likely to result in eclampsia if allowed to go on, he instituted treatment by calomel, hot pack, etc., increased the flow of urine and the function of the skin and bowels, and thus obviated eclampsia. There might be no albumin in the urine, yet the diminished secretion, resulting in retention of toxines, would lead to headache, restlessness, sleeplessness, apprehension, even melancholia and mania, and finally to eclampsia. Physicians should learn that no progress could be made in the treatment of such cases by bromides. The excretions must be augmented. One should make a careful study of the urine during pregnancy, especially as to the quantity of urea and entire solids. It was a great mistake to suppose that the pregnant woman could be in no danger as long as the urine was not highly albuminous. In many cases of eclampsia or threatened eclampsia it contained no albumin or very little. As soon as eclampsia set in, there were two indications, one being to promote copious elimination, the other to empty the uterus. The poison which threatened the mother often killed the child.

DR. W. T. LUSK said his own experience in puerperal eclampsia had been chiefly of interest in speedily emptying the uterus.

DR. LAPTHORNE SMITH, of Montreal, thought that as soon as there was the slightest danger of puerperal eclampsia, the uterus should be emptied. Whenever the urine was much diminished in quantity and was loaded with albumin, he thought it was almost criminal for us to remain idle when we had a means of putting the woman's life in safety. The best diuretic was plenty of water.

DR. GEORGE J. ENGELMANN, of St. Louis, highly approved of prophylaxis. The urine should be examined frequently, and appropriate treatment adopted for increasing its quantity if necessary. He had seen it contain so much albumin as almost to completely coagulate, yet the woman was carried to term with safety without inducing labor.

The **PRESIDENT** thought the question was one of renal insufficiency rather than of albuminuria. In many cases the urine contained no albumin until after the first convulsion, but it had contained a much smaller amount of solids than it should. In other words, the kidneys were not doing their work, and he knew no better plan than that recommended by Dr. Smith, of having the patient drink large quantities of water. This was the best prophylactic. The President also related some interesting experience with veratrum viride, which confirmed Dr. Reamy's views of its efficacy and safety in large doses.

A FEW CASES OF TRUE PELVIC CELLULITIS: A PLEA FOR MORE THOROUGH PELVIC SURGERY.

DR. ELY VAN DE WARKER, of Syracuse, said if he had known there was going to be so much said against the furore for operative gynecology at this meeting he might have hesitated to put in the sub-title to this paper. The cases related were intended to show that pelvic cellulitis might exist independent of inflammation of the other pelvic tissues, or in connection therewith. The time had come when we knew what pelvic cellulitis was, and also what it was not. Its occurrence in connection with inflammation of other structures in the pelvis was often overlooked. It might exist in the upper pelvic cellular tissue, or it might extend down between the vagina and rectum. When the latter occurred it could be appreciated by touch with one finger in the rectum and the other in the vagina. In one case related a posterior vaginal incision was made early, and thus suppuration was obviated, being in line with the suggestion contained in Dr. Henrotin's paper.

Among those who discussed this paper, was **DR. J. W. WILLIAMS**, of Baltimore, who said that while independent pelvic cellulitis was not of frequent occurrence, and it was still less frequently proven at autopsy, yet he had made a post-mortem in two instances where its existence independent of other pelvic inflammation was shown.

THE PREVENTION OF UTERINE DISEASE DUE TO CHILD-BEARING.

DR. W. GILL WYLIE of New York read this paper. The points which he wished to bring out were: (1) that the induction of labor could now be induced with little risk compared with fifteen years ago when practical antisepsis had not reached such a high degree of perfection; (2) that there was an efficient method of preventing extension of sepsis after labor; (3) a method of favoring involution.

The genital organs of women were first to suffer during growth, since they received their nourishment, as it were, from the surplus vitality, for they were not themselves essential to the existence of the particular individual. Many women came to the lying-in room with an imperfectly developed pelvis and pelvic organs. He fed them well and put them into as good condition as possible; and if the pelvis were not well developed, or if the cervix were hard, he induced labor at a time more or less in advance of full term. The position of the child was first rectified by external version. In bringing on labor he preferred a gum catheter introduced up into the uterus and left over night. These days we should seldom see sepsis, but in the event that it occurred it would be found limited in nearly all instances to the interior of the uterus for three or four days; and if treated at this time the patient could nearly always be saved. After washing out the vagina and cauterizing any lacerations with pure carbolic acid, unless there was rapid and continued improvement within a few hours, he began by washing out the uterus with a solution of carbolic acid (1–40 or 1–100), then with the fingers or forceps cleared the uterus of all clots. If it was an old case, he first dilated the canal with steel dilators, but never used tents of any kind because they were liable to force septic matter up into the tubes. After cleansing the uterus, it was swabbed with pure carbolic acid, then the cavity was washed out with a hot solution of carbolic acid (1–60). If the improvement did not continue, he now washed out every hour. He did not hesitate to operate when such measures failed.

Dr. Wylie used boro-glyceride pledgets about the tenth day to keep the uterus up and favor involution, leaving them in twenty-four hours and repeating twice a week. Tears were sewed up if necessary. Involution would surely be secured within six weeks to two months. Now, if necessary, a laceration of the cervix could be repaired.

Dr. A. P. Dudley, of New York, opened the discussion on Dr. Wylie's paper, and said he thought it was not advisable for this Society to recommend frequent induction of premature labor, for those who saw most cases of labor were not as proficient in antisepsis as gynecologists should be, and much mischief might arise from the practice. Dr. Dudley thought subinvolution and many pelvic troubles could be prevented by always sewing up lacerations immediately, whether of the perineum, vagina or cervix.

Dr. H. P. C. Wilson, of Baltimore, advocated the use of the finger-nail in preference to the curette when it was necessary to clear the uterus after labor. He had never in such cases used the curette; nor would he introduce gauze. Leave the canal wide open, and thus obtain the freest possible drainage. If it were necessary, the uterus should be washed out every four or five hours, observing in all things the strictest cleanliness. To these measures add the best nourishment.

Dr. William T. Lusk, of New York, spoke warmly against interfering with the uterine cavity in cases of slight rise of temperature after labor. Nature's method was to throw out white corpuscles and form a barrier against the development of streptococci in the uterus, and if we entered with the curette we would break down this barrier and favor extension of the infection. Let these cases alone, and thirteen out of thirteen, instead of only nine, would recover.

Dr. J. W. Williams, of Baltimore, agreed with Dr. Lusk in the class of cases to which the latter had referred. In the other class, with putrefactive germs and necrotic material, remove this and wash out with boiled water. There was no danger of poisoning the patient where simple water was used.

Some further remarks were made by **Dr. J. M. McCoble**, an invited guest, and the author.

DECIDUOMA MALIGNUM.

Dr. J. Whitridge Williams, of Baltimore, described a case of malignant disease at the site of the placenta following labor, which he had had opportunity to observe in connection with Dr. Harris. It was the first case of deciduoma malignum fully described in this country. The condition was first fully appreciated by Sänger, in 1889, since which time about 34 cases had been reported altogether. In some cases the malignant process seemed to extend from the fetal side, in others from the maternal, in the former constituting a carcinoma of the uterus, while in Sänger's case it started in the decidual cells and was a sarcoma. The disease was rapidly fatal, and hence the necessity for examining all cases of supposed hydatidiform mole, retained placenta, etc., and at once removing the uterus in case it proved to be deciduoma malignum.

SOME POINTS IN SYMPHYSEOTOMY.

Dr. William T. Lusk demonstrated some diagrams, illustrating the method of performing symphyseotomy as he had observed it in Paris, how to prevent hemorrhage, etc.

Dr. Howard A. Kelly presented a paper by **Dr. Robert P. Harris**, of Philadelphia,

SYMPHYSEOTOMY IN CANADA AND THE UNITED STATES,

which was read by title. In a letter Dr. Harris gave reasons for preferring the spelling "symphyseotomy" to that of "symphysiotomy."

THE VALUE OF GAUZE DRAINAGE.

Dr. H. C. Coe, of New York, in a paper with this title, referred to the history of drainage in general, and the fact that the indications were now more strictly defined than formerly. He would consider only two applications of drainage, namely, of the uterus and of the pelvic cavity. Having been led to believe that the value of gauze as a drain had been exaggerated, he had addressed circulars to a number of prominent gynecologists and had found that there was a wide difference of opinion among men whose results were equally good. Many had the utmost confidence in gauze, which they used almost exclusively; others preferred tubes; and a third class rejected drainage entirely. But it was curious that some of the latter always inserted the gauze into the uterus after curettage even in non-septic cases. It was not the writer's purpose to seek to depreciate the value of gauze in pelvic surgery, but rather to seek to decide the question what it accomplished, whether it acted as a true drain or merely as a tampon.

The action of gauze when introduced into the uterine cavity differed according to the size of the cavity and the condition of the muscular walls. If the latter were flabby, it stimulated the organ to contract. After curettage and irrigation of the non-septic uterus this was its principal function. There was certainly nothing to drain away except blood and serum; and so far from maintaining patency of the canal it rather plugged the os and prevented fluid from escaping, so that drainage was more free after removal of the gauze.

As a hemostatic in abortion and after removal of neoplasms, the gauze acted purely as a tampon, besides favoring uterine contraction. In septic cases, puerperal and non-puerperal, it was only serum which escaped through capillary drainage. Fragments of decidual membrane, etc., were expelled after removal of the gauze. It was frequently noticed that the hoped-for fall of temperature after curettage only occurred after the tampon was withdrawn.

Dr. Coe believed that thorough irrigation with peroxide of hydrogen after curettage was followed by as good results as when the tampon was used, or even better.

With regard to drainage of the pelvic cavity with gauze he believed it had grown in favor on account of the increasing popularity of the vaginal route. In vaginal hysterectomy, however, gauze was to be regarded as a tampon rather than as a drain. It was used in abdominal surgery for three purposes, namely, (1) to cover extensive raw surfaces, both to check obstinate oozing and to prevent intestinal adhesions; (2) to isolate septic foci from the general peritoneal cavity by favoring the formation of adhesions; (3) to drain away septic fluids.

That septic material was removed to any extent by capillary drainage was doubtful. Certainly thick pus, fibrinous exudates and sloughs were rather prevented from escaping by the presence of tampon. Drainage took place the first twenty-four or thirty-six hours of thin, serous fluid which might constitute a favorable nidus for germs. The most rational way of favoring such drainage was to maintain a free opening in the vaginal roof. Thorough drainage through the abdominal wound could not be expected.

In short, the reader believed with Sawyer, that the expression "gauze drain" was a misnomer, since we should rather speak of the "gauze tampon." The following practical deductions were made: (1) The introduction of gauze into the non-puerperal uterus as purely a drain is unnecessary and even objectionable; (2) the gauze tampon, with a large, flabby, septic uterus after curettage promotes contraction of the organ, but often prevents the escape of septic matter which is expelled only after removal of the gauze; (3) tamponade of the pelvis with gauze is an invaluable means of arresting obstinate general oozing; (4) the gauze not only prevents the formation of intrapelvic intestinal adhesions, but favors the development of plastic lymph around septic foci, thus shutting them off from the general cavity; (5) capillary drainage with gauze, especially *per vaginam*, serves to remove a certain amount of serum which might form a nidus for germs, but little septic material beside.

Dr. William M. Polk, of New York, was elected President of the Society, Dr. H. C. Coe, Secretary. and Dr. J. M. Baldy, Treasurer.

A MONUMENT TO DUCHENNE.—A monument to Duchenne by MM. Desvergnes and Debrie is shortly to be erected in the Salpêtrière. It is also proposed to erect a memorial to Duchenne in his native city of Boulogne.

Recent Literature.

The Care of the Baby. A Manual for Mothers and Nurses, containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease. By J. P. CROZIER GRIFFITH, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Professor of Clinical Medicine in the Philadelphia Polyclinic and School for Graduates in Medicine; Physician to the Children's Hospital, to the Methodist Episcopal Hospital, and to the St. Agnes Hospital, Philadelphia; Member of the American Pediatric Society and of the Association of American Physicians. Philadelphia: W. B. Saunders. 1895.

As is stated in the preface, the author has endeavored in this book to furnish a reliable guide to mothers anxious to inform themselves with regard to the best way of caring for their children in sickness and in health.

He begins with a chapter on the hygiene of pregnancy, which gives practical and thoroughly commonsense information such as ought to be in the possession of a woman who is for the first time about to become a mother. In treating of the disorders of pregnancy, the author is careful to define the symptoms which should lead to a consultation with a physician; and, indeed, throughout the book evident care has been taken to give only such information as will help the mother in the care of her baby and herself, without leading her to assume too great responsibility in the situations where medical advice should be sought.

The peculiarities of the new-born baby and its growth are discussed, in chapters on those subjects, in a manner which will prove of great use to mothers who otherwise would become needlessly alarmed over a variety of matters not inconsistent with the perfect welfare of their offspring, and prevent their sending for the physician, perhaps in the middle of the night, to have their minds set at rest on some utterly insignificant matter. The baby's bath, toilet and clothes are discussed in a manner thoroughly practical, common-sense and free from prejudice. The same holds true in the chapter on infant feeding. Where more than one method of clothing or feeding the baby has advantages, those advantages are set forth in an unprejudiced manner and the choice left to the mother. "Exercise," "Training," and "The Baby's Rooms" are the subjects of excellent chapters.

The chapter on "The Sick Baby" is one of the the longest in the book, and necessarily one of the most difficult to write, as the author has to keep carefully between the extremes of making the mother foolishly confident of her ability to treat the sick baby herself, and rendering her likely to send for the physician unnecessarily on account of imaginary ailments. In the main we must admit that the doctor has succeeded admirably in his object, which is, as he states, to enable the mother to know "whether the child is ill, what is the probable nature of its ailment, whether she shall send for a physician, what she shall do before he arrives, and how she shall carry out his directions afterwards." The mother who reads this chapter carefully will get much help in solving these questions, be enabled to care for her sick baby more intelligently and efficiently, and consequently to help the physician in his part of the work.

To discuss the description of the various diseases of infancy and childhood in detail, would be beyond the scope of this review. It will perhaps suffice to say that they are in keeping with the rest of the book, which certainly ought to fill an important and helpful place in many households, during that peculiarly interesting and often anxious period which follows the advent of the first baby.

A Textbook of Chemistry. Intended for the use of Pharmaceutical and Medical Students. By SAMUEL P. SATLER, Ph.D., F.C.S. and HENRY TRIMBLE, Ph.M. Philadelphia: J. B. Lippincott Co. 1895.

The first hundred pages of this book contain a summary account of elementary physics. The authors give a description of the properties of solid, fluid, and gaseous substances, and then pass on to heat, light, magnetism, and electricity. The subjects are in general clearly treated, but their range is so wide that they cannot well be compressed into so small a space, and at the same time be presented suitably to the beginners for whose benefit the book is primarily intended. For such a one, one of the larger standard text-books of physics could be more easily assimilated.

The chemistry of the non-metallic and metallic elements is treated of in Parts II and III. In the case of every element its history, modes of occurrence, preparation, physical and chemical properties, and finally its combinations with other elements are described. Some practical exercises are added in the case of the non-metals. This part of the book (over 400 pages) contains sufficient of what is worthy of knowledge for the readers for whom it is intended.

In Part IV organic chemistry is treated of. The authors proceed after an introductory chapter to a description of the aliphatic hydrocarbons and their derivations, after which comes a cursory description of the furfuranithiophene and pyrol groups, leading to a consideration of the aromatic compounds containing one or more nuclei. The concluding chapters on organic chemistry are devoted to the alkaloids, terpenes, glucosides, bitter principles, and proteids.

Analytical chemistry and pharmaceutical assaying are contained in Part V. Such a succinct account of analytical chemistry as is here given, intended for use in the laboratory, would have been better omitted from a text-book.

No more than 280 pages are devoted to organic chemistry! Condensation to this extent of the enormous amount of material now existing should only be obtained by the rigid separation of the less from the more important. In their attempt to do this the authors have only been partially successful. They are in many places needlessly prolix, and in others important matters are only superficially mentioned or else omitted altogether. In the chapter on organic analysis, for example, a combustion is described at great length, as are also the different methods of determination of vapor density, but there is not a word about Raoult's method of determining molecular weights. The authors occupy three pages with starch, one containing illustrations alone, while only eleven pages in all are devoted to the proteids. In the case of "terebenum" the authors give seven lines to discrepancies between the U. S. P. and the results of a chemist in regard to boiling-point and composition, whilst "physostigmine" with its salts is done with in four lines, and "muscarine" in one, etc.

A more careful revision would have prevented such oversights as the statement on page 777 that choline is "quite poisonous" whilst on page 680 it is called "non-poisonous." An example of unnecessary repetition is the introduction both on page 637 and on page 900 of the directions of the U. S. P. for the preparation of Fehling's solution; in neither place, however, is its liability to decomposition mentioned, with the consequent necessity of always testing it before use.

The majority of the numerous illustrations in the book could have been omitted without loss; they contribute mostly nothing to the elucidation of the text. The general get up of the book is excellent.

Practical Dietetics, with Special Reference to Diet in Disease. By W. GILMAN THOMPSON, M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine in the University of the City of New York, Visiting Physician to the Presbyterian and Bellevue Hospitals. New York: D. Appleton & Co. 1895.

In the first part of this book the writer presents what it is indispensable for physicians to know of food and food preparations, that is, the composition and uses of water, salts, meats, etc., as well as fruits and fats. In the second part stimulants, beverages and condiments, including the action and use of alcohol and wines are considered. In the third part the cooking, preparation and preservation of food is discussed, and the amount required for healthy persons. Following this, he gives foods required under special conditions, such as age, climate, etc., and the general relations of food to special diseases. The writer's appreciation of the importance of every practical detail is evidenced by the chapter on the administration of food for the sick, in which he takes up regularity in feeding, quantity of food needed, feeding in helpless patients and nutrient enemata. The writer gives the views of many practitioners in regard to the dietetic treatment of many special diseases, including infectious diseases, those of the respiratory and nervous systems, diseases of the alimentary canal and of the skin, diet after anesthesia and after various surgical operations. Finally, he gives dietaries of institutions, those used for athletic training, etc.

Fewer subjects in medicine present greater difficulties to an author than that of dietetics; and Dr. Thompson has done the profession a service in collecting so much information on this subject and presenting it in so systematic and attractive a manner.

Syphilis. By ALFRED COOPER, F.R.C.S. Eng. Second edition, enlarged and illustrated by twenty full-page plates, twelve of which are colored. Edited by EDWARD COTTERELL, F.R.C.S. Eng. Philadelphia: P. Blakiston, Son & Co. 1895.

The first edition of Dr. Cooper's work appeared in 1884. At that time he had been surgeon to the Lock Hospital for nearly twenty years, which experience, together with a private practice extending over a still longer period, had given him ample opportunity for the study of various forms of venereal disease. A second edition has now been published in which many important additions have been made, rendered necessary by the progress made in this branch of medicine during the last ten years. The chapters have all been revised, and some of them entirely rewritten and a new chapter on the Relationship between Syphilis and Insanity has been introduced. The illustrations are new. The colored plates representing the various cutaneous lesions caused by syphilis, may be regarded as fair. Ten or fifteen years ago they might have been classed as excellent, but so great advances have been made in this line of work of late years, by the aid of colored photography and by the newer processes, that Dr. Cooper's illustrations cannot compete in accuracy and in artistic finish with many of the modern French, English and American reproductions. The microscopical photographs also are not on a par with the best work that has been done of late years.

With regard to the subject-matter of the book, it is, as was that of the first edition, safe and sound in the main. There is no pretence to great scholarship, nor to striking individuality, but the author's experience, which has been large, entitles him to a respectful hearing, and his views, although not always the same as our own, are never without logical support. The book cannot be regarded as a distinct contribution to the literature of syphilis. As a "reliable guide and help to all who are engaged in the study of syphilis," it may be looked upon as fulfilling its mission, although its value will be more apparent to those who have not as yet progressed very far in that study than to the more advanced student.

Physical and Natural Therapeutics. By GEORGES HAYEM, M.D., Professor of Clinical Medicine in the Faculty of Medicine of Paris. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Philadelphia: Lea Brothers & Co. 1895.

One-half of this book is devoted to the remedial uses of electricity and this subject is profusely illustrated; the other half, less than 200 pages, discusses atmospheric pressure as a therapeutic agent, likewise climate, thermic agents, hydropathic measures and mineral waters. These topics are, of course, viewed largely from an European standpoint. The editor has added a few pages on American climatic treatment, but fails to present, as fully as is desirable for the American physician, the resources of his own country. There is also a short supplement on American mineral waters.

Portions of the work are valuable; but its excellences are not such as to make it indispensable to the practitioner whose shelves are already supplied with books relating to these subjects.

Eyesight and School Life. By SIMEON SNELL, F.R.C.S. Ed., Ophthalmic Surgeon to the Sheffield General Infirmary; Lecturer on Diseases of the Eye at the Sheffield Medical School, etc. With numerous illustrations. Octavo, pp. 70. Bristol: John Wright & Co. 1895.

This is an excellent little book, evidently intended for the use of non-medical readers who are interested in schools and education; nevertheless, it could be profitably read by every family practitioner who has the best interests of the children under his charge at heart. Technicalities have, as far as possible, been avoided; and in the case of those employed, foot-notes have been inserted to render the meaning clear to non-medical readers.

After a short and clear description of the refraction of the eye and its abnormalities there follows an attractive presentation of the statistics of the increase of myopia in school children and more advanced students.

The proper lighting of school-rooms is well illustrated by a series of reproductions of photographs of properly and improperly lighted school-rooms. The question of school furniture is considered and illustrated, as are also good and faulty positions assumed by the pupils while reading and writing.

The book contains a strong plea for the teaching of a vertical handwriting instead of slanting writing, and concludes by urging upon both teachers and parents more attention to the question of the eyesight of young children.

The work is a short but admirable presentation of the subject of which it treats.

Politzer's Text-Book of the Diseases of the Ear and Adjacent Organs. Third Edition. Translated by OSCAR DODD, M.D., edited by SIR WILLIAM DALBY, F.R.C.S., M.B.

Between the publication of the first English translation of Politzer's text-book in 1883 and the present date, the advances in aural surgery have been considerable, and it is to these that attention is especially called in the present edition, which embodies also, with the modifications necessary, the substance of the first edition translated by Cassells.

The additions which occupy the greatest space in the new edition are those referring to the middle-ear operations, to the intracranial complications of suppurative middle-ear disease and their treatment and to the recent contributions to our knowledge of the structure and functions of the labyrinth and to its pathology.

There are 73 additional illustrations, including reproductions of the more recent of Politzer's admirable sections of the labyrinth, and both the translating and editing of the work have been carefully and painstakingly done.

Diseases of the Ear. By EDWARD BRADFORD DENCH, Ph.B., M.D. New York: D. Appleton & Co. 1894.

Dr. Dench's text-book of 634 pages, with eight colored plates and 152 illustrations in the text, shows much careful work and is on the whole well arranged and well printed, the division of the subjects into sections with large headings facilitating its use for purposes of reference. With the author's individual views in regard to the surgery of the middle-ear, especially in chronic non-suppurative cases, the reviewer believes that the majority of aural surgeons of larger experience than the author are not likely to agree.

The Lumleian Lectures on Certain Points in the Ætiology of Disease. Delivered before the Royal College of Physicians. 1892.
The Harveian Oration. Delivered before the College in 1893. With a Bibliographical Notice of Harvey and an Appendix of Statistical Tables.
By P. H. PYE-SMITH, M.D., F.R.S., Senior Physician to Guy's Hospital. London: J. & A. Churchill. 1895.

These pages are pleasant reading and give evidence of the well-considered experience and ripe scholarship which are known characteristics of their writer. Dr. Pye-Smith's Lumleian lectures on "Certain Points in the Ætiology of Disease," contain many suggestive observations and reflections; the Harveian oration, sound advice which the profession may profitably lay to heart.

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THE ECONOMICS OF PROSTITUTION.

DR. WOOD HUTCHINSON, in an address before the Tri-State Medical Society of Iowa, Illinois and Missouri at its last meeting, gives the results of his studies of the economics of prostitution.[1]

He reviews the unsuccessful attempts to stamp out prostitution, as in the Papal dominions for more than two centuries. The utmost that ecclesiastical, civil and military authority has been able to do is "to change the form and increase the extent of prostitution." He believes that the attempt at regulation (in Paris, St. Louis and other cities) has been equally futile. Among the results which he alleges, is "the decline of the brothel and the enormous multiplication of the grisette"; "the diminution of the marriage-rate of the community" (by rendering concubinage in some form safe, popular, and economical); the ratio of illegitimate births is increased; venereal diseases are not lessened but promoted (1) because the seeming protection which supervision gives is often a snare and a delusion; (2) because the number of clandestine prostitutes is increased, and the most fruitful breeding-ground for venereal diseases is among these "clandestines." This last contention is also affirmed by Yvon Gyon and others.[2] All these writers concede a certain economic utility in prostitution, that is, with society as at present constituted, it is "a necessary evil."

As to the dominant motive which induces women to enter this profession, the following is the average obtained from the answers (some thirty in all), from representative men in various great metropolitan centres:

Love of display, luxury and idleness . . .	42.1%
Lack of employment	9.4
Seduction (in which they were innocent victims) .	11.3
Bad family surroundings	23.8
Heredity	7.8
Primary sexual appetite	5.6
	100.

This makes a showing strikingly similar to that of the criminal classes who are recruited mainly from the idle and shiftless among all classes, and from the defective classes, these two causes, including heredity, accounting for nearly 75 per cent. in the above table. Prostitution may be regarded as emphatically a trade, chosen from love of idleness, of luxury, and absence of a sense of honor and decency.

In a second series of questions as to secondary and remote causes, the answers (some twenty in number) were signally concordant with the above: Love of display, bad family surroundings, heredity and lack of employment were the main causal factors alleged.

The next question relates to the class of society from which the mass of our prostitutes come. Out of twenty-one answers to this question, eighteen reply "lower," "lowest," "poor and defective," "factory-girls," or some equivalent term. One replies "lower middle," and two "middle."

As to the grade of education of these recruits, seventeen reply "very low," "uneducated," "analphabets," etc., and four only reply "fair," and "average." This corresponds with the results of Du Chalelet, who found that the prostitutes of Paris practically all come from the laboring or artisan class, and especially from those whose lack of intelligence and perseverance makes them mere day-laborers. By an elaborate examination of their certificates, he also found that out of 4,470 prostitutes, 2,332 could not sign their names (55 per cent.), and 1,781 could sign but badly, leaving only 110, or barely 2.5 per cent., who could write at all, or legibly. In short, the prostitute possessed of a spark of refinement, education, or intelligence is extremely rare.

From a somewhat extensive experience with prostitutes in the general hospitals of London, Paris and Vienna, and a systematic study of the physiognomies of thousands of them upon the streets of the above cities and of New York, Philadelphia and Chicago, the author has no hesitation in declaring that a handsome or even attractive-looking prostitute is rare, and that the average of beauty is lower among them than in any other class of woman. The only important exception to this statement is the unchaste class among actresses and artists' models, who are no real exception, as they are almost forced into vice from the extreme exposure and pressure of their occupation. "Whatever other evils the fatal power of beauty may be responsible for, it has nothing to do with prostitution." "As everywhere else, so even here, beauty is a sign of purity and wholesomeness, a safe guide in nine cases out of ten."

The next question is: "What class furnishes the largest proportion of its own members to the ranks of vice? The unanimity upon this point is practically complete. Of twenty-two answers, sixteen say "factory-girls," "shop-girls," "saleswomen," "waitresses," etc.; four say "domestic servants," and two, "those too idle to have any occupation." In short, it is the women engaged in public occupations who are most in danger. Again, we have the commercialization of women as a powerful factor in the production of this vice. It is based on a trade-instinct, pure and simple.

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[1] American Gynecological and Obstetric Journal, September, 1895.

[2] See Westminster Review, January, 1870, "Govermental Experiments in Controlling Prostitution."

As to the life expectation of the prostitute, twenty-two observers give the life duration at nine and five-tenths years. The same method gives the death-rate as seventy-five per cent. greater than that of normal women of the same station; the causes of death are alcohol (which holds the first place), venereal diseases (which comes second), morphine, chloral, cocaine, etc.; suicide has a fourth place.

As to the question of the effect of prostitution upon the propagation of the species, it has been again and again shown that women of this class seldom have descendants. Barely three and one-tenth per cent. of prostitutes bear children at all during the ten years of their career. Like all other evils, prostitution is self-limiting. The reason for this sterility is obvious. Disease of the sexual organs, syphilis, "preventions" of every description, abortions and infanticide easily account for it. Of the children born alive, very few survive (ignorance, disease or neglect). As to the proportion who marry, the average is 13.2 per cent., but upon this point there is substantial agreement, namely, that those who do are practically sterile. The proportion who permanently reform is variously estimated; the average is low, 6.8 per cent.

Dr. Hutchinson concludes that from the female side of this institution (prostitution) "we are concerned principally with the most worthless varieties of women, the degenerates, or criminals, and the idle, the mercenary, and the shameless of the working classes — women, in short, whom the community can well afford to spare; that these women, when fairly launched in their career, are practically absolutely prevented from propagating their kind while remaining in prostitution, and rapidly destroyed if they remain in it; that very few marry, and those who do so are barren in a high degree; in short, prostitution is an eliminative agency of high value and wonderful efficiency for first sterilizing and then rapidly destroying the worst specimens of the sex."

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THE CASE OF MISS LANCHESTER.

THE case in question has attracted a great deal of attention in England, and been the subject of comment in both the medical journals and the daily papers, especially in connection with a pronounced tendency to social radicalism in much recent English fiction. In brief, the case is that of a young lady who for some time had been living an independent life, who had made up her mind that women should be emancipated, and had openly declared her intention of disregarding social rules and living with a man below her in station. Such conduct was considered by her parents as evidence of insanity, and they wished to save the lady from her own act. The lady was forcibly seized by her relations after having been seen, and certified as of unsound mind, by a leading physician; and on an urgency order she was taken to an asylum. She was seen by the Commissioners, who, according to one evening paper, expressed regret that they could only advise the lady but could not control her acts. They were convinced that her symptoms did not represent any definite mental disease, and that therefore they must order her discharge. No complaints of any kind are made against the asylum. The point remains for consideration, whether the physician was justified in signing a certificate of lunacy under the circumstances.

In commenting upon the case the *British Medical Journal* says editorially:

> It is possible that the conduct of Miss Lanchester appears to be highly unreasonable; but everything depends upon the way in which a change in character has developed. No one will deny that the disregard of moral and social laws is among the earlier symptoms of insanity; therefore, if a person who has always led a strictly conventional life suddenly gives rein to his feelings, we are prepared to watch for other symptoms of loss of control. If, on the other hand, the change in character and in acts follows a slow course of development which bears a direct relationship to the surroundings, it cannot be considered or treated as disease.
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> It would be a reversion to the long past to treat individual disregard of social conventions as criminal or lunatic. Dr. Blandford, who gave the first certificate, is an alienist physician of long experience, eminence and high character. He studied at Oxford and graduated M.A. and M.D. in 1854, when this distinction was rarer than it is now. He is lecturer on psychological medicine at St. George's, and the author of the article "Insanity" in Quain's *Dictionary of Medicine* and has filled more than one high office in his department of medicine.
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> All who know Dr. Blandford are certain that he has been influenced solely by conscience and conviction as to the act he performed in signing an urgency order. We feel very strongly, however, that the urgency order is a very powerful weapon which must not be used recklessly, or it may be distrusted by the public. It is a most valuable means for rapidly placing very violent patients under control, but it is not intended for the speedy removal of persons who may have followed a course of conduct offensive to the opinions of their relations.

With the statement that individual disregard of social conventions should not be regarded as evidence of lunacy we must certainly agree. Moreover, such a disregard of social conventions as this young woman expressed to her father and brothers her intention of indulging in, namely, cohabiting with a man whom she refuses to marry, would not be regarded in England as illicit or criminal. In this State fornication is against the law, and is liable to punishment as such.

In committing her under the lunacy act Dr. Blandford states that he was partially actuated by the fact that there was insanity in her family. Other considerations which influenced him were the following:

> She had always been eccentric, and had lately taken up with Socialists of the most advanced order. She seemed quite unable to see that the step she was about to take meant utter ruin. If she had said that she contemplated suicide a certificate could have been signed without question. I considered I was equally justified in signing one when she expressed her determination to commit this social suicide. She had a monomania on the subject of marriage, and I believed that her brain had been turned by Socialist meetings and writings, and that she was quite unfit to take care of herself.

Miss Lanchester is the product of the same sociological tendencies and movements as produce writers of and a public for such books as "The Woman Who Did" and "Jude the Obscure."

OUR CORPULENT POLICEMEN.

IN recommending for retirement a certain patrolman weighing over three hundred pounds, who has lost two hundred and thirty days on account of illness during the last two years, Police Surgeon Nevin, of Jersey City, in a communication to the Board of Police Commissioners of that place, calls attention to the prevalence and bad effects of obesity among policemen. He states that too many of the men of the force are over weight to an extent that unfits them for the active duties that a policeman is at all times subject to be called upon to perform, and goes on to say: "The life of a policeman is at best a very inactive one. They are not often called upon to take much active exercise, and in consequence there is but little muscular development. Any active criminal could make his escape very readily so far as most of our policemen are concerned. Any one can notice that as soon as a man is appointed on the force he begins right away to increase in weight and abdominal measurement, his muscles become flabby, and as a result of all this he moves more slowly than was his wont. If this change is progressive, he becomes actually unfitted for police work."

The thought has probably occurred to many of our readers, as it has to us, on seeing some of the corpulent members of our police force on patrol, how easily an active crook could escape the pursuit of such a protector of our lives and property! The tendency to obesity and general decrepitude among policemen has been noted in other cities than that of New Jersey, and it is well that the effects of the inactive life of many policemen upon their effectiveness as officers of the law should be considered. Perhaps it would be a little too much to demand that our policemen should be kept in as good physical training as the members of a college crew or team; but their training might at least include long distance running, and there might be a weight limit. The reasons for these suggestions are sufficiently obvious.

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MEDICAL NOTES.

A NOBLE EPITAPH. — The scientific record of Pasteur is thus summed up on a marble tablet which was recently set up by order of the Paris Municipal Council in the old laboratory of the École Normale: —

Ici fut le Laboratoire de Pasteur.
1837.— Fermentations.
1860.— Génératione spontanées.
1865.— Maladies des vins et des bières.
1868.— Maladies des vers à soie.
1881.— Virus et vaccins.
1885.— Prophylaxie de la rage.

A WOMAN PHYSICIAN RECEIVES OFFICIAL RECOGNITION IN AUSTRIA.—Dr. Georgina Roth has been formally appointed, with the sanction of the Austrian Emperor, to a government post, that of medical adviser to the home for the daughters of deceased army officers. Dr. Roth is herself the daughter of an Austrian general, but was compelled to take her medical degree in another country, Switzerland, for the reason that the Austrian universities still refuse to open their doors to female students.

THE EFFICIENCY OF ELECTRIC HEATERS. — The German Hygienic Association has offered a prize of 12,000 marks for a paper on the efficiency of electric heaters. The essays must be written in German and sent to Professor Konrad Hartmann, Charlottenburg, not later than July 1, 1896. In these fall days when we are subject to the usual attacks of colds, headaches, and tonsillitis due to the overheating of our houses by the furnace fire, which in spite of its attendant discomfort we do not dare to do without, such an announcement may lead us to hope that a practical result will be achieved in the shape of an electric heater which can be regulated to the variations of outside temperature with greater accuracy than has been attained with the furnace. Freedom from leakage of coal gas would be an advantage also of no small moment.

THE LATEST FAITH-HEALER. — A faith-healer named Schlatter lately appeared in the city of Denver, and shortly afterwards disappeared therefrom, whose methods are decidedly different from other modern Christian Scientists and the like, in that he makes no charge for his services. He stands by the roadside, and extends the healing touch to all who come to him, and he is said to be busy all day, the queue of his waiting patients reaching far down the road. On his arrival several prominent physicians noted the disappearance of many of the chronic cases from their clientele, but it is reported that now they are beginning to return. Imaginary ills have been in many instances cured, and the fact so inexplicable to the Colorado mind that no charge has been made for the healer's services, has probably had a good deal to do with arousing the credulity of the public. Zouave Jacobs, Schlatters and their prototypes appear on the medical horizon about so often, and go through about the same developmental stages.

NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During week ending at noon, November 20, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 134, scarlet fever 27, measles 5, typhoid fever 19.

FATAL COASTING ACCIDENT ON THE BICYCLE. — The recent accident in Brookline in which a fall from a bicycle, while coasting, resulted in the death of a lieutenant of the police force, calls attention to the very real danger of coasting on the bicycle, especially for the heavy and middle-aged. The list of fatal and serious accidents from this cause has grown very rapidly of late.

ANNUAL MEETING OF THE ALUMNÆ ASSOCIATION OF THE BOSTON TRAINING-SCHOOLS FOR NURSES. — The first annual meeting of the Alumnæ Association of the Boston Training-school for Nurses attached to the Massachusetts General Hospital, was held in Perkins Hall, Boylston Street, Boston, Tuesday, October 29th. Seventeen members were present at the roll-call. Miss Alice O. Tippett, Vice-President, presided in the absence of Miss Brown, the President. The Treasurer, Mrs. D. H. Kinney, was unable to be present. Miss Blanche M. Thayer, matron of the City Hospital, Quincy, was elected Second Vice-President of the Association. A paper on "Organization" was read by Miss Sophia F. Palmer, of Washington, D. C. A committee of five members was appointed to draw up a "Code of Ethics" to serve as a standard by which members of this Association may be judged, also to serve as a guide to members when in doubt. Miss Martha A. Parker, matron of the Salem Hospital, was appointed chairman of this committee, the other members appointed are Miss Annie L. Fox, Miss Elizabeth McPhail, Miss K. L. Davis, Miss Caroline N. Cayford. The next meeting of the Association will be held in February.

MEDICAL REGISTRATION IN MAINE. — The time for registration of all physicians and surgeons in Maine who are entitled to register under the new law expires December 31st. After that date all applicants for registration will have to pay a fee of ten dollars, and be examined in each of the seven branches mentioned in the act, before a certificate can be granted. Out of the first 186 applications for registration under the law, only one applicant was rejected.

THE SEVENTH SON OF A SEVENTH SON. — A man claiming divine healing powers in virtue of the peculiarity of his line of descent on his father's side, which is indicated in the heading of this note, is reported to have recently administered a compound containing whiskey to the patient of a regular physician in Salem, Mass. The dose was forced upon the patient against his will, and without the knowledge, of course, of his physician. The patient died soon after taking the dose. The impostor who gave the dose, named John Reed, was promptly arrested in Salem. The peculiar feature of the case is, however, that a second John Reed, also claiming to be the seventh son of a seventh son, and possessed of divine healing powers, was arrested in Southbridge on the same warrant. The man arrested in Salem, however, confesses to have given the dose.

NEW YORK.

AN UNFORTUNATE COMBINATION. — On November 14th a coroner's inquest was held in the case of a very mysterious death last month from a dose of Epsom salts. The victim was Otto Odendahl, a lad fourteen years of age, and the salts were purchased at a reputable druggists on Bible House Square. The symptoms pointed to strychnia poisoning, and the inquest was delayed in order that a full investigation of the case might be made. Dr. Ernest J. Lederie, assistant chemist to the Board of Health, who had charge of the analysis of the contents of the boy's stomach and of the package of salts from which the dose was taken, reported that the salts taken contained ten grains of sulphate of strychnia to the ounce. No other samples of Epsom salts at the shop where the package was purchased were found to contain any strychnia, but as the testimony taken at the inquest showed considerable laxity in the handling of medicines in that establishment (although it could not be ascertained how the strychnia got into the salts), the coroner's jury brought in a verdict censuring the firm of druggists "for the careless manner which, it appears from the evidence, they have been in the habit of putting up Epsom salts for public sale, and for the employment of incompetent persons to do work of like character."

NEW BATHS FOR THE BELLEVUE HOSPITAL. — A system of fine new baths, Turkish, Russian and medicated, is now being erected at Bellevue Hospital at a cost of $10,000.

BEQUESTS TO A HOSPITAL AND SANITARIUM. — By the will of the late Samuel Inslee, a wealthy merchant who died recently, bequests of $5,000 each are left to a number of charitable objects. Among them are the Manhattan Eye and Ear Hospital and the sanitarium for consumptives at Saranac Lake founded by Dr. E. L. Trudeau.

A SUIT WITH DAMAGES FOR VACCINATION. — Some time since Emil Schaefer brought an action against Dr. H. L. Schelling, of the Brooklyn Board of Health, to recover $10,000 for alleged personal injuries sustained. He claimed that Dr. Schelling entered his house and compelled him by force and violence to submit to vaccination, and that he suffered severely from loss of blood and the effect of the vaccine lymph. The trial of the case came up in the Circuit Court, Brooklyn, before Justice Gayner, on November 15th, and at its conclusion the jury awarded a verdict of $1,500 to the plaintiff.

AN APPOINTMENT BY CIVIL SERVICE RULES. — Dr. Robert M. Elliott, of Rochester, has been appointed from the civil service eligible list as Medical Superintendent of the Long Island State Hospital for the Insane at a salary of $150 a month.

DEATH OF DR. ZABRISKIE. — Dr. John Lloyd Zabriskie, a member of the Brooklyn Board of Education and a well-known and popular physician of Flatbush died suddenly of cardiac disease on November 10th. Dr. Zabriskie was sixty-four years of age. He was a graduate of the University of the City of New York and the old New York Medical College, and at the time of his death was one of the trustees of the Long Island College Hospital. He was also a consulting physician to that institution and to the Kings County Hospital. He leaves a widow, two sons and a daughter.

A REMARKABLY LOW MORTALITY. — The report of the Registrar of Vital Statistics presents a remarkably good showing for the week ending November 16th. It is not often that the weekly mortality of the city gets below the 700 mark; but last week the number of deaths reported was 676; against 721 for the previous week and 706 for the average of the corresponding weeks of the past five years. The deaths from diphtheria decreased from 41 to 26, those from pneumonia from 117 to 96, and those from typhoid fever from 15 to 5.

PHILADELPHIA.

The Pennsylvania Colony Farm for Epileptics. — The project of establishing a colony for epileptics, where country living and farm work, judiciously apportioned, would constitute the principal therapeutic treatment, which has been under consideration for some time, has at length assumed a definite shape. The court has granted a charter for the "Pennsylvania Colony Farm for Epileptics" and the corporators have organized November 13th by the election of Dr. Wharton Sinkler, President. Among the Directors are Drs. Charles K. Mills, James C. Wilson and Wharton Sinkler. A charitable gentleman of Philadelphia has offered to give $50,000 for the erection of suitable buildings provided that the farm be secured before January 1, 1896.

Schleich's Method of Local Anesthesia. — Dr. Theophilus Parvin at the last meeting of the County Medical Society, 13th inst., read a paper on "Schleich's Method of Local Anesthesia" by subcutaneous and parenchymatous injections of weak cocaine-morphine solutions, and demonstrated the effect in his own person, by allowing an incision of an inch in length to be made in his forearm and to be stitched up, under its influence, in the presence of the Society. He declared it to be an absolutely painless procedure and predicted great future usefulness for this method in surgery, and that at least fifty per cent. of the operations now done under general anesthetics, will ultimately be done by this method, which he declared suitable even for major operations.

Changes in the Staff of the Philadelphia Hospital. — At the Philadelphia Hospital some changes were made in the attending staff, on the 12th inst., by the Department of Charities and Correction. Dr. Wm. G. Porter's resignation was accepted and a complimentary vote given him in acknowledgment of twenty-five years' service on the surgical staff, Dr. Alfred C. Wood was chosen to succeed him. The Board then increased the number of surgeons from nine to ten, and appointed Dr. J. Chalmers DaCosta to the position thus created. Dr. Ernest B. Saugree was appointed Pathologist, to succeed Dr. Coplin who recently resigned to accept a chair in Vanderbilt University at Nashville. Dr. Clara Marshall resigned from the obstetrical staff and Dr. Elizabeth L. Peck was elected to fill this vacancy.

Radical Cure of Hernia. — Dr. G. G. Davis read a paper at the November meeting of the College of Physicians, on "The Radical Cure of Hernia, with Especial Reference to the Treatment of the Sac," in which he suggested a novel method of utilizing the sac as a plug to close the internal opening of the ring, a method which he had tried clinically and which he had found to be satisfactory.

Miscellany.

VIRCHOW ON PASTEUR.[1]

At a meeting of the Berlin Medical Society, held on October 16th, being the first since the recess, Professor Virchow, in speaking of the members who had died since they had last met, referred to the late M. Pasteur as the most eminent of them all. That Society, he said, had conferred its honorary membership on the departed French *savant* in 1892. Professor Virchow emphasized the universal importance of Pasteur's proof of the inadmissibility of the theory of autobiogenesis. Pasteur was not friendly to the German Empire, but that had not affected the Society's opinion of his merits. In order to understand his feeling towards the German Empire it was necessary to remember that he earned his first title to fame at Strassburg University, now a German seat of learning. Professor Virchow concluded by remarking that a final judgment as to the value of Pasteur's inoculations against hydrophobia was not yet possible, but it was already necessary to admit that it had formed the starting-point of a new departure in medicine.

Correspondence.

THE STUDY OF DERMATOLOGY IN EUROPE.

(Continued from No. 20, p. 503.)

VIENNA.

About the middle of October I arrived in Vienna, the city of all Europe to which I had looked forward with the greatest eagerness, but which in the end proved to be the bitterest disappointment.

The wards of the skin department contain many very interesting cases; in fact, no hospital in Europe in my knowledge, save Paris, can offer so much material for study. But it is not the material which is at fault in Vienna, it is the instruction. Kaposi, to my mind, occupies a more important position than any dermatologist in the world. It is to him that by far the greatest number of foreigners flock for instruction, and to him is granted the privilege of teaching this cosmopolitan audience the supreme results of the world's past and present investigations with the priceless aid of the Vienna patients and the Vienna collection of dermatological paintings, but unfortunately this valuable trust is not satisfactorily fulfilled. Kaposi's teachings represent the dermatology of his greatest mental activity, that is, the dermatology of a previous decade, and in his lectures, *his* work is the principal, in fact, the only theme, for he recognizes the labors of no other dermatologist living or dead, save of Hebra. To all fair-minded men modern dermatology is the product of the labor of all countries, and modern lectures should be a *résumé* of these combined studies; but Kaposi's lectures are a repetition of Kaposi's published works, and little attention is given to the immense strides which the study of dermatology has made during the last ten years — a progress due almost wholly to men who do not live in Vienna.

[1] British Medical Journal.

For these reasons Vienna proved a great disappointment to me.

The cause for this state of affairs is the absence of competition. There is only one purely dermatological clinic of any size in Vienna; there is only one head to this department — a head which has been allowed its own rein, unchecked for years, and now remains the autocrat of Vienna dermatology. It is a great pity that such is the case. The many dermatologists of Paris and of every other large city are a help to each other — a healthy stimulus for work and a rich source of knowledge in cases of doubt.

I have spoken perhaps a little plainly in my judgment of Vienna, but it was with the fixed purpose of helping my successors who go abroad with the intention of studying the diseases of the skin. For the most part Americans go to Europe, or rather to Vienna, for this purpose, and there they remain, apparently believing that there is no other city of any consequence for the pursuance of their studies. If I show in this paper that such is not the case, and that several cities should share the precious time previously allotted blindly to Vienna, then I shall feel that I have not written in vain. With these words of warning as a peroration, let me now describe the bright side of my winter in Vienna. There are certain great advantages to be enjoyed there, and if it were not for the peculiarities (above referred to) of the master, Vienna would be an excellent, if not the best, school for the first months of study abroad.

The lectures of Kaposi are given every morning, save Saturday and Sunday, at eight o'clock. Perhaps I have been too severe, and should say that the lectures are almost unrivalled except for one who wants to go deeply and thoroughly into modern dermatology, and it is for the general student, after all, perhaps, that they are intended. The lectures are very broad in their scope and comprise talks upon the patients presented, upon the history, pathology, clinical features, therapy and prognosis of the disease under discussion. Many colored plates and microscopical drawings are passed about the room, and Kaposi himself draws upon the board the principal pathological features of his subject. On some diseases Kaposi spoke at great length and minuteness; but as the end of the semester approached many were touched upon only slightly, and others were hardly mentioned. This fault was due to the great number of patients which were presented from day to day. It would be the lecturer's intention to speak of a certain disease on the morrow. The following day would come, and with it an interesting new patient whose case would occupy perhaps a large portion of the hour, and then the promised lecture was deferred or else forgotten. A perfect series of lectures is certainly always difficult to deliver, but it seemed to me that Kaposi was trying to accomplish too much in the time allotted to him.

One great drawback in Vienna is the length of the vacations and the frequency of the fête-days. Three weeks at Christmas and six weeks in spring, with a church holiday every third week, cut into the precious working time and leave the lecturer and the foreign student perplexed as to how to compensate for the loss of time which may never come again. The vacations in Vienna are an especially heavy deprivation to the foreigner, for with their advent Kaposi disappears from the lecture-room, the out-patient department, and, with a few exceptions, from the wards, and all is left in charge of the first assistant whom Americans and English do not follow.

Professor Neumann's lectures are wholly clinical, and pertain chiefly to gonorrhea and syphilis, but very often an exceedingly interesting dermatological case creeps in. It was surprising to me how monotonous the cases were, for with one hundred beds and an out-patient department to choose from, Neumann devoted weeks and months even to presenting case after case of gonorrhea and of soft and hard chancres, and neglected almost entirely the later forms of syphilis. As might be supposed, such a selection of subjects was not especially edifying or instructive, and was rendered all the more unattractive by the brutally coarse and disgusting treatment which the patients received.

After Christmas I found that I was not gaining much knowledge of syphilis from Neumann's lectures, but simply seeing drop after drop of gonococci, and so I decided to go to the out-patient department of Kaposi, which is under the charge of his first assistant. Here, again, I was disappointed. By the subjoined list one can well see what the out-patient department provides. This is a list which I made during the winter of the cases presenting themselves from Monday to Saturday inclusive. By its side I will place a list of the patients whom I saw in *one day* in Paris, and while the Vienna one means all the patients who appeared during the six days, the Paris one signifies only those men, women and children who came before one of the three physicians holding the clinic on that particular Saturday. Both lists were made quite hap-hazard, and are not selected ones in any way.

VIENNA.

One week in January.

Acne	8
Acne rosacea	5
Alopecia areata	2
Combustio	1
Dermatitis	4
Dysidrosis	1
Eczema	23
Epithelioma	2
Erythema multiforme	1
Erythema nodosum	1
Favus	1
Herpes progenitalis	2
Herpes zoster	3
Impetigo	3
Ichthyosis	1
Lupus vulgaris	8
Pediculi capitis	2
Pediculi vestimentorum	1
Pernio	3
Prurigo	2
Pruritus senilis	1
Psoriasis	5
Scabies	33
Syphilis	10
Sycosis	1
Seborrhea	2
Ulcera cruris	2
Urticaria	7
Verruca	3
	127

PARIS.

One day in June.

Alopecia areata		4
Balanitis		3
Dermatitis (professional)		8
Dermatitis (medicamentosa)		2
Dysidrosis		1
Eczema		8
Eczema of nails		1
Eczema of the lip		2
Eczema seborrhoicum		2
Epithelioma		1
Erythema multiforme		4
Erythema bullosum		1
Herpes zoster gangrenosus		1
Impetigo		4
Pediculi capitis		3
Pediculi vestimentorum		6
Pityriasis rosea		2
Pruritus senilis		3
Psoriasis		1
Scabies		2
Scrofulosis		3
Seborrhea		2
Stomatitis mercurialis		1
Syphilis:		
Chancre of lip	2	
Chancre of cheek	1	
Syphilis palmaris	1	
Tertiary syphilis	4	
Secondary syphilis	13	21
Tinea tricophytina:		
Scalp	4	
Body	2	
Beard	1	7
Tuberculosis lingualis		1
Tuberculosis of tonsils		1
Urticaria		1
		96

Such superiority in the quantity and the quality of the material of Paris over Vienna is indeed surprising, and I hope will serve to convince the future American student of the skin of the advisability of devoting some time at least to Paris, for at present he seems little inclined to do so. But to return to the Vienna out-patient clinic. There is no regular system adopted there. A house-patient to be cauterized for lupus comes in for treatment between two out-patients, and while he is screaming under the hot platinum, the new-comers are listening in awe to his cries. Then several out-patients are brought in, and these are followed again by house-patients whose warts or lupus are to be scraped out or burned. Such is the method, if method it can be called, pursued in Kaposi's out-patient department; and so it is that the time from nine until half-past ten is consumed, and at the end the student finds that he has seen but very few rare cases among the many examples of scabies and of eczema.

On Saturdays, Kaposi allows the students to make the visit with him, and here at last the foreigner finds a reason for the fame of Vienna. In the one hundred beds lie many good cases — many rare ones to study, and many commoner ones upon which the results of Vienna therapy can be watched from week to week. The celebrated perpetual bath of Hebra can also be seen, and it surely is an extremely valuable palliation, even in the cases where an absolute cure can never be accomplished. Frightful cases of decubitus and of burns form the principal cases which fill the water-beds, while very often cancer in its last stages adds to the horrors of this living mortuary. I think I learned more of the therapeutics of the skin in Vienna than elsewhere, and some of Kaposi's methods were magnificently successful. I only wish that less cruelty were practised in his department. Sex and age mean nothing to his assistants, and cannot save the unfortunate victims of lupus from frequent, prolonged and deep Paquelinization with absolutely no anesthesia.

Every city has some one especially good cure for one or more diseases, but I think Vienna and Paris stand forth most conspicuously in this respect. The emplastrum saponatum salicylicum of Professor Pick of Prague accomplishes wonders in the cure of the old eczemas at Vienna, while the prolonged local or general baths with frequent use of the nitrate-of-silver stick for the exuberant granulations serve the same purpose for the burns; and I shall never forget the result of Kaposi's modification of Wilkinson's ointment (followed by β naphthol and later by fatty inunction) upon a well-marked case of generalized ichthyosis. These are some of the most successful cures which recur to my mind now, and which emphasize Vienna in connection with the amelioration of these diseases.

In addition to the great public courses of Kaposi and Neumann, there are the private courses, which in other branches of medicine in Vienna are so deservedly popular and instructive; but, alas, in skin these courses cannot be turned to such advantage, save that given by Dr. Rille, the first assistant of Neumann. Of Rille's course I cannot say too much in praise. He appears to be the most progressive dermatologist in Vienna, but even he is over adherent in some instances to the doctrines of the great Hebra. His course, like the others, covers twenty hours usually, and is generally attended by fifteen or twenty Americans and English, who thus can see the patients or material in the closest proximity, and who can hear lectures and ask questions upon the subjects which are of greatest interest to them. Rille presents about fifteen cases each day, and speaks of each one carefully and scientifically, but neglects the therapeutic side. The patients are the selected ones from Neumann's one hundred beds, and, although mostly venereal, are interspersed with many purely dermatological ones. The women's wards are peopled as a rule by "puellæ publicæ," who are practically prisoners until cured, and the gynecological table there forms one of the best places for the study of venereal sores in women that I have ever seen — in fact, I know of but one other in Europe which is superior, and that is Professor Pick's in Prague.

And now, before leaving the subject of Vienna, I must not fail to speak of the pathological side of dermatology. On my arrival, I asked Kaposi whither I should turn to find a good master in this branch of my work. Kaposi kindly gave me a card to Professor Paltauf, who, with his assistant Riehl, has done the best microscopical work in Vienna in recent years. I went to Paltauf's laboratory several times unsuccessfully, and finally spoke to a stranger who had been in Paltauf's laboratory for several months, and he advised me to go elsewhere if I was seeking instruction, for Paltauf seldom came, and had but a few moments to give to students. I then found a place in Dr. Albrecht's laboratory, where I remained for six months, and where I worked for five or six hours each day. Here I received several new specimens every evening which I hardened, cut, stained and mounted in their turn, and finally showed to Albrecht, who would tell me all he could about them. Unfortunately he had never done any special work on the skin, and so could not give me much minute knowledge, but he provided me with a good deal of material, and the technique and study of these specimens occupied the time until I was ready to leave. Albrecht is a delightful, quick and bright man, and one who knows general pathology wonderfully well for his age. From what I learned of laboratories in Vienna, no other is better for one who is hunting for dermatological material in combination with instruction.

When one turns to bacteriological work in Vienna one must be again disappointed. The course given is very primitive compared with its prototype of the Pasteur Institute. The lectures and instruction are very brief, the apparatus almost niggardly, the demonstrations feeble, and the course, as a whole, very expensive considering what one receives in return.

With the advent of May I left Vienna with mingled feelings of regret and gladness. From Kaposi's lectures and wards and from Albrecht's laboratory and Neumann's wards, I had undoubtedly absorbed more good than I was willing to admit, and yet I was sorry that my last two months were spent in Vienna, for subsequent experience verified only too plainly how much better I could have been employed elsewhere.

Charles J. White, M.D.

(To be continued.)

Medical Fees in Russia.—The Russian Government is nothing if it is not parental. How wisely the "Czar of all the Russias" looks after his "children" has been aptly illustrated by his government taking in hand the question of medical fees. Medical men in Russia have now to charge according to a fixed scale, of which the following are the chief details. The towns are divided into three classes: those having more than 50,000 inhabitants, those having between that number and 5,000, and those having fewer than 5,000. The patients are also divided into three classes, according to the amount of their worldly possessions, their official position and social standing. The fees for the first class have been fixed at five roubles; for the second, three roubles; and for the third, thirty kopecks. According to the official register of medical practitioners in Russia, the total number of women licensed to practise medicine in the domain of the Czar was 691. In the medical faculties of Switzerland there were, in 1891–92, 114 Russian women studying medicine; the majority of these are described as "politically untrustworthy" from the official point of view. There is also a considerable number of Russian women—for the most part Jewesses—at present studying medicine in Paris. —*The Sanitarian.*

METEOROLOGICAL RECORD,

For the week ending November 9th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ...3	30.38	40	48	33	82	63	72	N.W.	W.	5	6	O.	C.	.11
M...4	30.65	42	49	36	77	80	78	N.W.	S.	6	9	O.	C.	—
T ...5	30.56	50	63	38	85	87	86	W.	S.W.	9	15	O.	C.	—
W...6	29.40	58	69	48	86	75	80	W.	S.W.	13	10	C.	C.	—
T ...7	30.26	62	73	51	95	78	86	S.W.	S.W.	12	17	O.	C.	—
F....8	30.02	64	72	57	93	92	92	W.	S.W.	14	10	O.	O.	—
S....9	29.88	56	66	47	90	96	93	S.	N.	5	6	O.	R.	.07
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 9, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,892,332	721	230	13.44	21.00	1.96	2.10	5.88
Chicago	1,678,967	209	140	48.48	30.72	1.20	10.56	19.68
Philadelphia	1,164,000	423	124	16.56	15.12	1.44	2.88	10.32
Brooklyn	1,100,000	350	110	11.60	17.69	1.16	.87	7.25
St. Louis	560,000	—	—	—	—	—	—	—
Boston	494,205	195	48	14.79	15.30	2.55	2.04	10.20
Baltimore	496,315	187	60	14.58	12.42	3.78	4.32	5.94
Cincinnati	336,000	102	28	11.76	16.66	1.98	3.96	6.86
Cleveland	314,537	95	—	13.65	13.65	2.10	4.20	6.30
Washington	275,500	—	—	—	—	—	—	—
Pittsburg	238,617	84	25	17.85	10.01	1.19	10.01	4.76
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	27	—	18.50	18.50	11.11	—	3.70
Charleston	65,165	—	—	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	98,687	30	8	10.00	20.00	3.33	—	3.33
Fall River	88,020	25	8	20.00	20.00	16.00	—	4.00
Lowell	84,359	47	19	6.39	12.78	—	—	2.13
Cambridge	81,519	28	8	27.44	10.29	6.86	—	20.58
Lynn	62,335	17	1	23.60	17.70	—	—	17.70
New Bedford	55,254	24	15	8.32	8.32	—	—	8.32
Springfield	51,534	13	2	—	6.97	—	—	—
Lawrence	52,153	14	—	14.28	14.28	7.14	—	—
Holyoke	40,149	—	—	—	—	—	—	—
Salem	34,437	16	5	16.50	24.75	—	8.25	8.25
Brockton	33,157	14	7	14.28	—	7.14	7.14	—
Haverhill	30,185	9	4	—	22.22	—	—	—
Malden	29,706	11	1	9.09	—	—	9.09	—
Chelsea	31,295	19	10	42.56	—	—	—	31.92
Fitchburg	26,394	10	5	—	30.00	—	—	—
Newton	27,022	8	3	12.50	12.50	—	—	12.50
Gloucester	27,663	—	—	—	—	—	—	—
Taunton	27,093	4	1	—	—	—	—	—
Waltham	20,877	6	3	—	16.66	—	—	—
Quincy	20,712	6	1	50.00	—	—	33.33	16.66
Pittsfield	20,447	3	0	—	33.33	—	—	—
Everett	18,578	4	0	50.00	25.00	—	25.00	25.00
Northampton	16,738	5	1	—	20.00	—	—	—
Newburyport	14,554	—	—	—	—	—	—	—
Amesbury	10,920	—	—	—	—	—	—	—

Deaths reported 2,844; under five years of age 898; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 478, acute lung diseases 499, consumption 360, diphtheria and croup 235, diarrheal diseases 87, typhoid fever 84, whooping-cough 18, scarlet fever 17, measles 13, cerebro-spinal meningitis 12, erysipelas 7, malarial fever 5.

From whooping-cough New York 5, Philadelphia 4, Chicago 3, Brooklyn and Lowell 2 each, Cleveland and Chelsea 1 each. From scarlet fever New York and Pittsburgh 5 each, Brooklyn 2, Chicago, Philadelphia, Cincinnati, Providence and Lynn 1 each. From measles New York 9, Chicago and Philadelphia 2 each From cerebro spinal meningitis Chicago 5, New York 3, Nashville, Worcester, Lawrence and Chelsea 1 each. From erysipelas New York and Chicago 2 each, Philadelphia, Brooklyn and Baltimore 1 each. From malarial fever Brooklyn 3, New York and Charleston 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530, for the week ending November 2d, the death-rate was 21.9. Deaths reported 4,454; acute diseases of the respiratory organs (London) 366, measles 150, diarrhea 136, diphtheria 108, fever 83, whooping-cough 56, scarlet fever 53, small-pox (West Ham 3, London 1) 4.

The death-rates ranged from 12.3 in Croydon to 35.5 in Liverpool; Birmingham 20.6, Bolton 24.9, Brighton 17.4, Cardiff 20.8, Halifax 15.0, Hull 21.7, Leicester 18.3, London 21.2, Manchester 27.5, Newcastle-on-Tyne 20.4, Nottingham 17.5, Portsmouth 17.3, Sheffield 19.3.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 9, 1895, TO NOVEMBER 15, 1895.

Thomas Jellis Kirkpatrick, Jr., and **John Hamilton Stone**, appointed assistant surgeons with the rank of First-Lieut., to rank as such from November 6, 1895, and ordered to report to the president of the Army Medical School for instruction.

The leave of absence granted **Captain Eugene L. Swift**, assistant surgeon, is extended one month and he is authorized to go beyond sea.

Major Louis W. Crampton, surgeon, granted leave of absence for three months, to take effect on or about December 1, 1895.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 16, 1895.

T. Owens, surgeon, detached from Naval Station, Port Royal, S. C., and granted three months' leave.

J. R. Waggener, surgeon, detached from the "Independence" and ordered to the Mare Island, Cal., Navy Yard.

Geo. P. Bradley, surgeon, detached from the Mare Island, Cal., Navy Yard and ordered to the "Indiana."

Geo. Rothganger, passed assistant surgeon, detached from Naval Hospital treatment and ordered to the "Independence."

J. E. Gardner, surgeon, ordered to Port Royal, S. C. Naval Station.

SOCIETY NOTICE.

Norfolk District Medical Society.— The Roxbury Fellows of the Norfolk District Medical Society are able by the courtesy of Dr. W. P. Bowles, to entertain the Society at the University Club, 270 Beacon Street, Boston. The meeting will be held on Tuesday, November 26th, at 8 P. M.

Communications: "Infantile Paralysis," J. W. Courtney, M.D.
"A Case of Interstitial Pregnancy," George E. Mecuen, M.D.
J. C. D. Pigeon, M.D., *Secretary*.

EXCURSION TO BERMUDA.

Dr. J. B. Mattison, of Brooklyn, N. Y., is arranging an excursion of medical men to Bermuda, sailing December 12th and returning the 2d or 13th of January.

BOOKS AND PAMPHLETS RECEIVED.

Eyesight and School Life. By Simeon Snell, F.R.C.S., Edin., Ophthalmic Surgeon to the Sheffield General Infirmary and to the School for the Blind; Lecturer on Diseases of the Eye at the Sheffield Medical School; Consulting Ophthalmic Surgeon to the Rotherham Hospital; Author of "The Electro-Magnet in Ophthalmic Surgery," etc. With numerous illustrations. Bristol: John Wright & Co. 1895.

A Text-Book of Practical Medicine, designed for the use of Students and Practitioners of Medicine. By Alfred L. Loomis, M.D., LL.D., Professor of Pathology and Practical Medicine in the Medical Department of the University of the City of New York; Visiting Physician to Bellevue Hospital, etc. Revised and enlarged with 207 illustrations. Eleventh edition. New York: William Wood & Co. 1895.

The Pathology and Surgical Treatment of Tumors. By N. Senn, M.D., Ph.D., LL.D., Professor of Practice of Surgery and Clinical Surgery, Rush Medical College; Professor of Surgery, Chicago Polyclinic; Attending Surgeon to Presbyterian Hospital; Surgeon-in-Chief, St. Joseph's Hospital, Chicago. Illustrated by 515 engravings, including full-page colored plates. Philadelphia: W. B. Saunders. 1895.

w complete in Twelve Parts, at 50 cents each. Part I will be sent on receipt of 50 cents; or the complete work of twelve Parts for $5.00, sent by mail.

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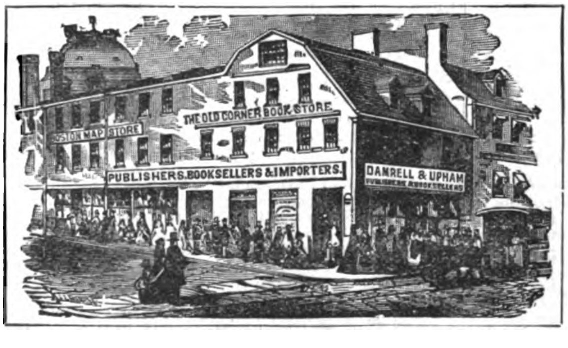
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Antikamnia Chemical Company ... Antikamnia
Armour & Co .... The Armour Laboratory
Ayer's Hygienic Coffee ....
Baker, L. W., M.D. .... Riverview
Baker, Dr. W. H .... Card
Battle & Co. .... Bromidia
Bellevue Hosp. Med. Col. ..... Sessions of '94-95
B. H. R. Distilling Co. ....
Borine Chemical Co. 20,
Bowdoin College .... Medical Department
Bowker, Dr. E. M. .... Vaccine Virus
Boylston Medical Prize Questions ....
Channing, Dr. Walter ....
Chauncy Hall School ....
Cocke, Dr. James R. ....
Codman & Shurtleff ...... Surgical Instruments
Coll. of Physicians and Surgeons, Boston ...
Crittenton, C. N. .... Vinolia Soap
Cutter, Dr. W. P ....
Dartmouth College, N. H .... Med. Department
Doliber-Goodale Co. .... Mellin's Food
Drevet Co. .... Glycozone
Edes, Dr. R. T. ....
Fairchild Bros. & Foster .... Milk Mixture
Feeble-Minded Youth, Inst. for .. Barre, Mass.
Fehr, Dr. J. .... Baby Powder, etc.
Fellows, James I. .... Hypophosphites
Fisk & Arnold .... Artificial Limbs
Flood, Dr. Everett ....
Fougera, E. & Co. .... Imp'g Pharmacists 9,
Gear, J. Frank .... Surgical Instruments
Goldthwaite, Dr. S. V. ....
Goode, T. F. .... Buffalo Lithia Water
Gould's Medical Dictionary ....
Graham, Dr. Douglas ...... Treatise on Massage
Greene, Dr. E. M .... Examinations of Sputa
Harvard University .... Dental Department
Harvard University .... Medical Department
Improved Movement Cure Institute ....
Leedom, Charles .... Nuclein Solution
Lehn & Fink .... Mfg. Chemists
Lloyd, Andrew J. & Co. ..... Manufg. Opticians
Long Island College Hospital ....
Longmans, Green & Co. ....
Mackie, Dr. L. V. G. .... Sanitarium
Maltine Mfg. Co. .... Maltine
Mariani & Co. .... Vin Mariani
Marks, A. A. .... Artificial Limbs
Martin, Dr. F. C. .... Vaccine Virus
McElroy, P. J .... Glass Syringes
Medical Practices, etc. ....
Medico-Chirurgical College ....
Norton, Dr. Eben C. .... Card
N. Y. Polyclinic and Hospital ....
N. Y. Post-Graduate School and Hospital ..
Oakland Chemical Co .... Hydrogen Dioxide
Patch, E. L. Co. .... Lithia Tablets
Peake & Buzzell .... Surgeons' Supplies
Pinaud, Ed. .... Sels Romains
Polk, R. L. & Co. .... Med. and Surg. Register
Purdue Frederick Co., The ....
Reed & Carnrick .... Peptenzyme
Removal ....
Ring, Dr. Allan Mott .... Nervous Diseases
Rosse, Dr. Irving C. ....
Russell, Dr. F. W .... Card
Schieffelin & Co. .... Mfg. Chemists
Schulze-Berge & Koechl .... Migranin, etc. 3,
Seeley, I. B. & Co. .... Hard Rubber Trusses
Sharp & Dohme .... Mfg. Chemists
Stedman, Dr. Henry R. .... Card
Stillings, Dr. L. C. .... Card
Tanner, E. S. .... Publisher
Thayer, Henry & Co. ....
Theodore Metcalf Co. .... Coca
Twitchell, Dr. George B. .... Card
Tyree, J. S. .... Antiseptic Powder
Umpleby, J. T. .... Photography
University of Vermont ....
Walnut Lodge Hospital ....
Waterman, Dr. Thomas .. Animal Vaccine Virus
Weeks & Potter Co. .... Quinona
Wheeler, Dr. T. B. .... Phosphates
White, Dr. Walter H. .... Card
Willard, Dr. A. J. .... Card
Woman's Medical College, Baltimore ....
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Boston Dispensary,	McLean Asylum for the Insane,	Mass. Eye and Ear Infirmary,	Boston Lunatic Hospital,	The Carney Hospital.

Instructors in the Medical School are members of the medical and surgical staff of these institutions.

Teaching will be conducted in small classes and under the personal direction of the heads of the departments.

The courses will be mostly of eight weeks' duration, and the practitioner will be able during a brief residence to take several of them. Those desiring to study a specialty may pursue long, continuous courses in any single branch at reduced rates. All fees are payable at the Medical School to the Secretary.

A graduate of another recognized Medical School may obtain the degree of M.D. from this University after a year's study in the graduate course and after passing all the required examinations in under-graduate work. These examinations may be passed at such times as are agreed upon by the examiners and the graduate student. A certificate of attendance will be furnished when desired.

The following Courses are announced for 1895-1896.

Subject.	Instructor.	Place.	Time.	Fee.
1. Anatomy of the Joints	Dr. Dwight	Medical School	Special*	$25.
2. Dissection Courses	Dr. Dexter	Medical School	After Nov. 1	20.
3. Special Anatomical Instruction	Dr. Dwight	Medical School	Special*	Special.*
† 4. Histology and Microscopy	Dr. Minot	Medical School	Special*	30.
† 5. Elementary Human Embryology	Dr. Minot	Medical School	Special*	25.
† 6. Advanced Embryology	Dr. Minot	Medical School	Oct.—May	75-125
† 7. Physiology	Dr. Bowditch	Medical School	Special*	Special.*
† 8. Medical Chemistry	Dr. Wood	Medical School	Special*	35.
9. Clinical Microscopy	Dr. Whitney	Massachusetts General Hospital	Special*	Special.*
†10. Surgical Pathology	Dr. Mallory	Medical School	Apr., May	20.
†11. Pathology of the Infectious Diseases.	Dr. Wright	Medical School	Nov., Dec.	25.
†12. Pathological Anatomy and Histology of the Nervous System	Dr. Taylor	Medical School	Special*	15.
13. Clinical Medicine	Dr. Ernst	Massachusetts General Hospital	Oct.	15.
†14. Clinical Medicine	Dr. Knight	Boston City Hospital	Oct., Nov.	10.
†15. Clinical Medicine	Dr. Mason	Boston City Hospital	Nov., Dec., Jan.	20.
‡16. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Oct.	20.
‡17. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Dec.	20.
‡18. Abdominal Surgery	Dr. Conant	St. Elizabeth's Hospital	Oct., Nov.	25.
19. Clinical, Operative, Genito-urinary, Pathological and Minor Surgery	Drs. Monks and Thorndike	Boston City Hospital	Oct.—Dec.	25.
20. Clinical, Operative, and Minor Surgery	Drs. Burrell, Lovett, and Munro	Boston City Hospital	Dec.—Apr.	25.
21. Operative Surgery	Dr. C. B. Porter	Medical School	Special*	25.
22. Clinical Surgery	Dr. M. H. Richardson	Massachusetts General Hospital	Feb., March, Apr., May	25.
‡23. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Oct., Nov., Dec.	25.
‡24. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Apr., May, June	25.
25. Minor Surgery	Dr. Scudder	Massachusetts General Hospital	Feb., ‡Apr., ‡May	25.
26. Clinical Surgery	Dr. Gay	Boston City Hospital	Apr., May	15.
27. Clinical Surgery	Dr. Homans	Massachusetts General Hospital	March, Apr.	20.
†28. Orthopedic Surgery	Dr. Bradford	Children's Hospital	Apr.	15.
29. Clinical Obsterics	Dr. W. L. Richardson	Boston Lying-in Hospital	Nov., Dec., April, May	20.
30. Clinical Obstetrics	Dr. C. M. Green	Boston Lying-in Hospital	Jan., Feb., March	20.
31. Practical Obstetrics	Dr. Reynolds, Townsend, and Haven	Boston Lying-in Hospital	Special*	20.
32. Operative Obstetrics	Dr. C. M. Green	Medical School	Special*	25.
33. Diseases of the Skin	Dr. White	Massachusetts General Hospital	Oct.—June	25.
34. Otology	Dr. Blake	Infirmary	Dec., Jan., Apr., May	25.
35. Otology	Dr. Bryant	Infirmary	Dec., Jan	25.
†36. Ophthalmology	Dr. Standish	Infirmary	Dec., Jan.	Special.*
†37. Ophthalmology	Dr. Cheney	Massachusetts General Hospital	March, Apr.	Special.*
38. Gynecology	Dr. Swift	Free Hospital for Women	Oct.	25.
39. Gynecology	Dr. Swift	Free Hospital for Women	Dec.	25.
40. Gynecology	Dr. Davenport	Free Hospital for Women	Jan.	25.
41. Gynecology	Dr. Davenport	Free Hospital for Women	March	25.
42. Gynecology	Dr. Haven	Boston Dispensary	Nov.	25.
43. Gynecology	Dr. Swift	Boston Dispensary	Jan., Feb.	25.
44. Gynecology	Dr. C. M. Green	Boston City Hospital	Oct., Nov., Dec.	25.
45. Operative Gynecology	Dr. Davenport	Medical School	Special*	25.
46. Diseases of the Nose and Throat	Dr. De Blois	Boston City Hospital	Feb., March	Special.*
‡47. Diseases of the Nose and Throat	Dr. Farlow	Boston Dispensary	Oct.—Jan.	Special.*
‡48. Diseases of the Nose and Throat	Dr. Farlow	Boston City Hospital	Apr., May.	Special.*
‡49. Diseases of the Nose and Throat	Dr. Coolidge	Massachusetts General Hospital	Feb., March	Special.*
†50. Mental Diseases	Dr. Cowles	McLean Hospital	Special*	10.
†51. Bacteriology	Dr. Ernst	Medical School	Special*	25.
†52. Diseases of Children	Dr. Wentworth	Children's Hospital	Oct., Nov.	20.
†53. Diseases of Children	Dr. Wentworth	Children's Hospital	Dec., Jan.	20.
†54. Diseases of Children	Dr. Buckingham	Children's Hospital	Feb., March	20.
†55. Diseases of Children	Dr. Buckingham	Children's Hospital	Apr., May	20.
†56. Neurology	Dr. Knapp	Boston City Hospital	Feb., March	20.
†57. Neurology	Dr. Knapp	Boston City Hospital	Apr., May	20.
58. Neurology	Dr. Walton	Massachusetts General Hospital	Nov.	20.
59. Legal Medicine	Dr. Draper	Boston City Hospital	Oct.—June	25.
60. Hygiene	Dr. Harrington	Medical School	Special*	25.

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PAGE

ORIGINAL ARTICLES.

dies in Anesthesia and Anesthetics. y *Daniel E. Keefe, M.D.*, Springfield, Mass.... 533
nical Experience in Abdominal Surery at the Massachusetts General ospital. By *J. Collins Warren, M.D.* (Connued.)........ 536

CLINICAL DEPARTMENT.

r Months' Hospital Work in Abdominal urgery. By *F. W. Johnson, M.D.*, Surgeon, ynecological Department, St. Elizabeth's Hostal; Surgeon, Gynecological Department, Cary Hospital, etc........ 539
e of Cancer of the Cerebellum, Metasatic from the Breast; Death; Autopsy. y *Edgar Garceau, M.D.*, Surgeon to Out-Paents, Free Hospital for Women, Boston........ 543
us Erythematosus Treated Internally ith Phosphorus. By *H. L. Jenckes, M.D.*, alena, Ill., Member of the American Medical sociation........ 544
al Case of Acute Alcoholic Poisoning in Child. By *Wm. H. Devine, M.D.*, South oston........ 545

MEDICAL PROGRESS.

ent Progress in Laryngology. By *A. olidge, Jr., M.D.*........ 545
The Vascular Mechanism of the Nasal Mucous Membrane.— Micro-Organisms in the Healthy Nose. — Ethmoiditis. — The Prevalence of Adenoid Vegetations.— The Etiology of Lacunar Tonsillitis.— Simple Tonsillar Ulceration. Early Operation for Malignant Disease of the Larynx. —Nodes of the Vocal Cord.—Night Air.

REPORTS OF SOCIETIES.

American Dermatological Association. Nineteenth Annual Meeting, Windsor Hotel, Montreal, Can., September 17-19, 1895........ 547
President's Address. — Lupus Erythematosus Disseminatus.—Raynaud's Disease of the Ears. — Angiokeratoma of the Scrotum.— Hydroa Estivale.— Bromide Eruptions.

RECENT LITERATURE.

Modern Materia Medica. By Dr. Otto Roth. Revised by Dr. Gregor Schmitt. New York: William Wood & Co. 1895........ 550
A German-English Medical Thesaurus, or Treasure of Single and Compound Medical Words and Terms. By Rev. Henry Losch, M.D. Philadelphia: Published by the Author. 1893........ 550
Lindsay and Blakiston's Physician's Visiting-List for 1896. Philadelphia: P. Blakiston, Son & Co. 1893........ 550

EDITORIALS.

The Present Status of Serotherapy........ 550
Resuscitation after Submersion........ 551
Medical Notes........ 552
An Exploring Trip under the Direction of two Medical Men.— An Underground City.— The Migration of the Flea.— The First Operation under Ether in England.
New York.
Medical Reports of the Presbyterian Hospital. — Fortieth Anniversary of the Woman's Hospital.— A Twenty-four-Pound Baby.— A New Water-Supply for Brooklyn.— Typhoid Fever in Milk.— The Low Death-Rate Continues.

CORRESPONDENCE.

The Study of Dermatology in Europe. *Charles J. White, M.D.*, Boston. (Continued)... 554
Resuscitation after Submersion. *H. Hunt, M.D.*, Greenville, Moosehead Lake, Me........ 555
Pamphlets Relating to the Massachusetts Medical Society Wanted. *Edward J. Forster, M.D.*, Boston........ 555
New Catalogue of Massachusetts Medical Society, *Edward Jacob Forster, M.D.*, Boston. 555

MISCELLANY.

An Early Expression of the Need for Revising the Rules of Football........ 553
Meteorological Record, November 16, 1895.. 555
Record of Mortality, November 16, 1895.... 555
Army, Navy and Marine-Hospital Services. 556
Society Notices........ 556
Harvard Medical School. Evening Lectures........ 556
Books and Pamphlets Received........ 556

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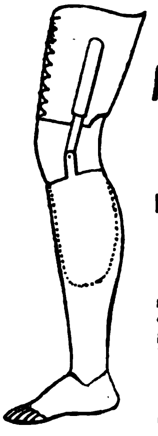

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Original Articles.

STUDIES IN ANESTHESIA AND ANESTHETICS.[1]

BY DANIEL E. KEEFE, M.D., SPRINGFIELD, MASS.

THE necessary limits of a paper for an occasion like this precludes a complete discussion of all the points of interest and importance relating to anesthetics. I shall content myself, therefore, with drawing your attention to the relations of ether and chloroform, incidentally mentioning nitrous oxide. I shall consider their relative strength, desirability and danger, as well as the best method for their administration; also the value of the statistics of fatal cases, concluding with a few statements more or less dogmatic, which I formulate as the result of some study, but more particularly from my own observations.

The two most important contributions to the subject of anesthetics during the last ten years are the report of the Second Hyderabad Commission[2] and the able paper of Dr. H. C. Wood before the Tenth International Medical Congress at Berlin, 1890. The conclusions of both agree on most points; but while Dr. Wood maintains that death from chloroform may take place either from primary respiratory paralysis or cardiac arrest, the latter being the usual mode; the Commission insists that respiratory paralysis is always primary and cardiac arrest always secondary. Undoubtedly the experiments of the Hyderabad Commission are the most accurate, extensive and far-reaching ever performed, and perhaps will never again be equalled so far as the inferior animals are concerned, for it used about 600 animals in the work, and availed itself of the most exact methods for recording its observations. So its conclusions are to be taken with great confidence. Dr. Woods's methods were equally scientific; and he quotes Dr. Chisholm of Johns Hopkins Hospital, Dr. Hare and others, whose experiments and conclusions agree with his own. He admits, however, that although chloroform is very fatal to dogs, cats show great tolerance of it. This very admission proves that there is nothing essentially lethal in the chloroform, but that the element of individual susceptibility is a very important consideration.

The only other paper on the general subject of anesthetics presented at the Tenth International Medical Congress was read before the Surgical Section by myself. Although when it was written I had no knowledge of the report of the Commission, for it was not printed, nor of the substance of Dr. Woods's paper, yet it is wonderful how near to the conclusions, especially of the former, I arrived.

I there said, regarding chloroform, A. C. E. mixture and ether: "For the purpose of discussion, as I do for practical purposes in their use, I shall treat them as uniform in their physiological effects, for the difference is not of such a character, nor is it so pronounced that it can be recognized by the senses.[3]

This was said in answer to the dictum of the leading text-books on materia medica and of anesthesia, to the effect that ether stimulated the heart and accelerated the pulse, while chloroform after first accelerating the pulse, acted as a cardiac depressor.

I insisted that neither acted as a *stimulant per se*, either primarily or secondarily; that it was the unusual situation, fear of the inhalation and operation that excited the pulse. I furnished reports of 178 inhalations in support of my statements, and my subsequent experience has convinced me more and more of the correctness of this contention. Now, if chloroform is just as free from tendency to produce cardiac syncope or paralysis as ether, as the Hyderabad Commission claim, and as I am disposed to think, the beliefs held by the vast majority of the profession must be revised. Professor Wood, while finding that in a large majority of his experiments on dogs the heart stops first, admits that respiration frequently is the first to do so, and that death may take place in either manner. He also states that the American dog is very sensitive to the lethal effects of chloroform as compared with the pariah dog of India; and indeed, Brown-Séquard, who was probably better qualified than any one else to speak on this subject, some years ago said that he noted a marked difference between the American and European dogs, that the vascular system was better developed in the latter, and that operations on them were much more bloody than like ones on American dogs. One would expect the difference between the American and Indian dogs to be much more marked, since the difference in temperature, habits and environment is greater.

So it would seem that there is something worth considering in the claim that the warmer latitudes are more favorable to chloroform than are more northern ones. But, may I ask, are they not also more favorable to ether or any other anesthetic? Is not the higher temperature of the surrounding media a help to tolerance, as well by preventing the loss of body heat by evaporation as by increasing the diffusibility of the anesthetic? Certain it is that the loss of heat is very large and the reduction of the body temperature considerable. We know, also, that the application of heat is one of the measures resorted to, and with reason, in cases of syncope under anesthetics.

My insistence, then, at the Berlin Congress that ether and chloroform were substantially alike in their effects on the pulse, that they did not accelerate it in any true sense, put me squarely on the same side as these eminent authorities, and against nearly all other recognized teachers and writers on the subject.

We now come to the consideration of the statistics of the matter. If chloroform is not more dangerous than ether, strength considered, why do more people die while inhaling it, and of what use are statistics? People die under chloroform as they do under ether and nitrous oxide; and chloroform, being the most powerful agent, is often substituted when failure is had with ether, and perhaps is frequently blamed for the sins of the latter. For instance, after a patient struggles for fifteen minutes with ether with no result, chloroform is substituted, the refractory patient is subdued, but not until the face is livid with venous blood, the return of which to the heart is prevented by spasm of the whole respiratory apparatus, and of the general voluntary muscles as well. The cerebro-spinal axis is, perchance, also congested, and pressure on the centres in the medulla may suspend either respiratory or cardiac movements, and the end has come. The patient is perhaps a plethoric, strong man in the prime of life, a free user of alcohol, and having perhaps an aneurism, fatty heart, or kidney disease without knowing it. And why should he not die? Indeed, the wonder is that he lived so long. Every day we see just such men dropping by the way, on our trains, in our railway stations, and in all places of public resort. Statistics may show more deaths from chloroform than ether, but I contend that the deaths under all anesthetics are too few to make the statistics of any value. Furthermore, the post-mortem examinations are so few, as compared with these deaths, that our want of positive knowledge of the *actual cause* detracts still more from their value. The deaths under anesthetics are, I assert without the fear of contradiction, fewer than the sudden deaths occurring in those not under anesthetics. If one dies while inhaling an anesthetic, that agent is blamed, but we frequently hear of a person walking into a physician's office to consult him for some — as was thought — slight indisposition, and expiring in the doctor's chair.

---

[1] Read before the Hampden District Medical Society, October 15, 1895.

[2] Lancet, June 21, 1890.

[3] I have just read (October 12, 1895) in Foy's Anesthetic Manual, p. 126, that Dr. J. C. Reeve in the Reference Handbook of the Medical Sciences has made this same claim, and therefore is in consonance with me in the matter.

If one's days are numbered, if his sands of life are nearly run, by reason of some perhaps hidden malady, and he is liable to "give up the ghost" at any moment, how can an anesthetic he happens to inhale justly be charged with his death? It is true that the excitement, attending the inhalation, together with the fear of what is to follow, may be the exciting cause, but the real one had long before nearly completed its work. Moreover, if a life is already forfeited by disease, of what value is such a life, either to its owner or the body politic? What if the exciting cause be put in motion a few days before some sudden exertion or excitement acts as such and closes the scene? It is only putting the principle of euthanasia into practice, and providing a painless death, without inflicting any great loss. Be it understood that I express no opinion on the subject of euthanasia.

I have made considerable effort to find some statistics of sudden deaths, both in this country and in Europe, but find there are, strictly speaking, none such prepared.

I am, however, indebted to the United States Department of the Interior (Census Bureau), and to Hon. Wm. M. Olin, the able and obliging Secretary of this Commonwealth, for some valuable information pertaining to the matter. Dr. Turnbull,[4] as quoted in Dr. Wood's paper[5] has collected 427 deaths under all anesthetics, which the doctor estimates as being about one-third of the real number. Accepting this estimate as correct, it would give us 1,281 as the actual number of deaths in nearly fifty years. I estimate that ether and chloroform have, during this period, been administered at least 16,000,000 times, and 35,000,000 would be nearer the correct number, but I prefer to have a wide margin so that I cannot be accused of making high estimates to favor my position. This gives a death-rate of less than .00008 of one per cent., as compared with 2.19 per cent., the rate per annum in Massachusetts for the whole population. It may be said that the sudden deaths and those under anesthetics are included in the 2.19 per cent. death-rate. Yes — but they are so few that they make no difference worth noting in the figures. Thus we see how small a fraction are the deaths under anesthetics, as compared with the ordinary deaths taking place in this State. Again, last year[6] there were 49,084 deaths, and in looking over the reports of the medical examiners I find this entry: "From all other, including alcoholism and various natural and unknown or ill-defined causes, usually of a more or less sudden nature," there were in 1893 reported 879 deaths, as compared with 890 in 1892. So, in two years we have in our own State, 1,769 sudden deaths without apparent cause, as against 1,281, in the whole world in nearly fifty years under anesthetics. The percentage of sudden deaths in this State, as compared with the whole number, is about 1.79 per cent. This would, assuming about 10,000 administrations[7] give us the number of deaths that ought to have taken place in this State under anesthetics in 1893 as about 178, or probably twenty times as many as took place in the whole world.

The foregoing figures are claimed to be only approximately correct, even the percentages are not closely figured. Let us now look into the character of the statistics of deaths under anesthetics.

In one edition of his book Dr. Turnbull gives a chart containing 100 deaths occurring in eight years under choloform. We will take this chart as a fair sample. Of this 100 cases the causes are put down in only 30, and are — shock, 4; collapse, 15; disease of the heart, 6; asphyxia, 3; syncope, 1; spasm, 1. Symptoms are given as — convulsed, in six cases; struggled violently, respiration irregular, face livid, in one case; vomiting caused suffocation in two cases. Such records show nothing as to the relative danger of anesthetics, only that the condition contributed to the accident. Post-mortem examinations were had in 34 cases. In six they proved negative, while 28 cases showed fatty degeneration or some other disease of the heart, with such extras as "pus on surface of brain"; and in many the kidney, liver and spleen, one or all were also affected. In 22 the condition of the patients was given; and it was such that no anesthetic should have been given, for they were people well advanced in disease. Only four of the entire number are set down as healthy, while four had the chloroform habit and two died by self-administration. The fact that they had the habit of administrating chloroform to themselves proves that there was nothing inherent in the chloroform inimical to their lives, otherwise they would have been dead before the habit was contracted. I may here say parenthetically that Sansom,[8] of London, in another series, performed 18 post-mortems, and found fatty hearts in all.

In 40 of the cases the quantity is given. In one case five minims were given; one, 15 to 20 drops; to a man forty-two years old, six minims; to a woman with uterine trouble, twenty-five years old, a few drops; 1, exceptionally small; 8, one drachm each; 11, two drachms each; 2, one and one-half drachms each. Thus, in 26 of the 40 cases the amount given was two drachms or less. These facts speak for themselves. The idea that six minims of chloroform would kill a healthy man forty-two years old, or that a few drops would cause the death of a woman twenty-five years old, even though all air were excluded, is preposterous, and I for one will not believe it. Neither will I believe that two drachms or eight grammes, if properly administered, will kill a *healthy* man. Fear alone, or acting in conjunction with the excitement and a disease necessarily fatal in itself, is what dealt the fatal blow. Thus is shown the fallacy, unreliability and general worthlessness of the statistics relating to anesthetics. Their small number makes them doubly valueless for deciding as to the relative safety of one anesthetic or another. Indeed, all the deaths under each and every one of them could and might happen from natural causes and be mere coincidences as to time, place and circumstance. Many observations have convinced me that there are two danger points in the administration of anesthetics.

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[4] Anesthetic Manual, Laurence Turnbull, Philadelphia, 1885.

[5] Proceedings Tenth International Medical Congress, Berlin, 1890.

[6] 1893 is meant, for that is the latest year of which reports are published.

[7] I am indebted to Dr. John W. Pratt, the energetic and courteous Superintendent of the Massachusetts General Hospital for valuable information used in preparing this paper.

[8] Chloroform, its Action and Administration, by A. E. Sansom, London.

(1) It has been proved experimentally that either anemia or hyperemia of the cerebro-spinal axis may induce convulsions more or less epileptoid in character. Believing that the heart is beating at its maximum as to force and frequency when the anesthetic is applied, the blood is being pumped into the brain with great force and volume, the irritating nature of the anesthetic acting upon the respiratory mucous membrane produces a state of spasm, both of the involuntary and voluntary muscles of respiration, thus forming an obstruction to the return circuit from the brain, which may cause such a state of congestion that the pressure on the cardiac or respiratory centres in the medulla may prove inhibitory, and death ensue from cardiac syncope, or as is most likely, from respiratory arrest. This respiratory arrest or spasmodic condition of the respiratory apparatus threatening immediate death, is the so-called "chloroform asphyxia."[9] I have found it in from three to five per cent. of cases under all anesthetics, as well as chloroform. Surgeon-Major Lawrie,[10] thinks it is caused by administering chloroform with an insufficient admixture of air, the strong chloroform being taken directly to the brain, which it paralyzes. I regard the explanation which I have given as much more in consonance with the physiological conditions known to exist, much less open to objection, and indeed the true explanation. Ordinarily, before this condition is produced the sedative action of the anesthetic lessens both the respiratory spasm on the one hand, and the cardiac force and rapidity on the other, and so removes the obstruction to the return of the venous blood while it diminishes the quantity of arterial blood sent. In this manner the respiration becomes easy and regular, and the first danger point is passed.

(2) After the anesthesia has been continued for a long time the heart's action becomes slower and weaker, the patient colder and colder, and perhaps so little blood is carried into the brain that anemia is caused; and the late deaths in convulsions are to be accounted for in this way. Here alcohol, ammonia and digitalis are indicated; and I suggest as good practice, not waiting for complete syncope, but giving a hypodermic of alcohol and one or two minims of fluid extract of digitalis when there is great pallor in the face and want of volume in the pulse. I say this notwithstanding that Dr. H. C. Wood, relying on the experiments of Dr. R. Dubois in administering alcohol to animals and then killing them with the anesthetic, and of his own in giving it when syncope had taken place, thinks that alcohol is of no value in these cases, being too closely allied to chloroform and ether, chemically and physiologically. But I would remind him that there is a vast difference between giving it when syncope is present, and producing syncope after the alcohol has been given. Moreover, he has not told us, if, after failing with alcohol, he has succeeded with any other agent in restoring the heart's action.[11]

As to the relative safety and desirability of anesthetics, I may say that several years ago, Lewis A. Sayre, the man who with Sims and Bigelow, perhaps, did more to make American surgery known and respected the world over than any other, penned the following:

"My preference is for chloroform, in the use of which I differ from all known authorities, who insist that chloroform should be largely diluted with air. My rule is to exclude all air except such as is impregnated with chloroform; from five to twenty drops administered may, according to the age of the patient, accomplish most completely and promptly all that is desired, without causing any violent struggles on the part of the patient, which often follows the administration of air with the anesthetic."[12]

Since reading these words I have paid more attention to the claims of chloroform; and although I am not prepared to go so far as to extend the application of his ideas as to the complete exclusion of air, to adults, I think them perfectly correct as to children. So, too, I think chloroform is the best anesthetic for children, for lying-in women, and for large, strong, plethoric men, for persons having valvular heart disease, lung and kidney troubles, and in many other cases; while weakly women, and persons with nervous and fatty hearts, who are anemic, take ether very kindly. As to the relative strength, I would mark chloroform 2,560 units, ether 445 and nitrous oxide 1. Ether may be compared to chloroform as to danger as a toy engine is to a locomotive. The steam locomotive may be, and is, handled with almost perfect safety, but we must remember that it is a powerful piece of mechanism, and see that our feet never get under the wheels, or we in any way grow careless in its handling. I must confess, however, that I have seen as many dangerous and unpleasant symptoms follow the administration of ether as chloroform, and possibly more, and that all the unfavorable symptoms with all anesthetics related to the respiration.

In conclusion, I may say:

(1) If there is any suspicion of weak heart, get the patient under the influence of digitalis for twenty-four hours, and give a hypodermic of four grammes of the tincture before beginning the inhalation.[13]

(2) Every one administering an anesthetic should measure the dose. Fifteen grammes (or half an ounce) of chloroform is a proper dose to produce anesthesia in an adult, and should be poured on at once, and no more should be used, only as needed to continue the anesthesia.

(3) Forty-five grammes (or one and one-half ounces) of ether is enough for a woman, and sixty grammes (or two ounces) of ether is enough for a man, and should be the charging dose. There may be an exceptional case where even sixty grammes of ether will not subdue a patient, but I should consider such an one not a good subject for ether and would substitute or add chloroform.

(4) The *face*, pulse and *respiration*, in order named should be watched attentively during chloroform administration, and the *respiration* and *pulse* in ether.

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[9] P. F. Mundé, New York Medical Journal, November 18, 1890.

[10] Lancet, June 21, 1890.

[11] System of Surgery, Dennis, 1895, H. C. Lea & Co.

[12] I have a letter from Dr. Sayre, bearing the date of August 21, 1895, in which he says: "I have nothing to add to what I then said and no change or alteration to make in the mode of administration."

[13] Wood, in Dennis's System of Surgery, H. C. Lea & Co., 1895.

It is not enough to see that the chest moves: we must hear the air enter the lungs.[14]

(5) A good plan is to combine chloroform with ether, especially if one fears to assume the responsibility of using pure chloroform; and twelve grammes (or three drachms) of chloroform and thirty grammes (or one ounce) of ether is a good charge, and can be depended upon to produce anesthesia. In this way the stage of excitement so common in ether anesthesia is avoided.

(6) Withdrawal of the anesthetic, the frequent momentary inversion of the patient, artificial respiration, strychnia, heat, digitalis, the galvanic battery, and sponging or sprinkling of face and breast with ice water, are the means for restoration of function arrested by anesthetics.

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CLINICAL EXPERIENCE IN ABDOMINAL SURGERY AT THE MASSACHUSETTS GENERAL HOSPITAL.

BY J. COLLINS WARREN, M.D.

(Continued from No. 21, p. 510.)

HYSTERECTOMY.

Fibroids of Uterus and Ovary, Abdominal Hysterectomy, Death. — L. L., a colored girl, single, aged twenty-seven years, entered January 9, 1895. Gave an indefinite history of syphilis, but was never pregnant. Five years ago had prolapsus uteri, and has always suffered from menorrhagia. Two years ago she noticed increasing size of abdomen, and stayed for a while in the Boston City Hospital, but refused operation. All bodily functions have remained apparently undisturbed by the tumor, and she has had no pain. Last winter for a short time she passed blood from her rectum. On examination, the diagnosis of uterine fibroma was made, and operation advised on account of the great size of the tumor.

On January 18th an eight-inch incision was made and the abdominal cavity opened. Considerable fluid was swabbed out of the general cavity. A large fibroma of the right ovary presented, overlaid in all directions by omentum whose veins, arteries and lymphatics were enormously dilated and tortuous. The omentum seemed to enclose the tumor as in a net, and the tumor seemed to be fed principally from the large vessels of the omentum. The tumor (weighing sixteen pounds) was found to be attached to the fundus uteri by a pedicle of about three fingers' breadth. After the omentum vessels had been gathered in a bunch, clamped and tied, the tumor was lifted out of the abdominal cavity, the pedicle clamped and the tumor cut away. The uterus was much enlarged with fibroids in the walls and it was thought best to remove it also. The broad ligaments were tied, cut, and the uterus removed over a rubber tourniquet, leaving peritoneal flaps. The flaps were inverted and sutured with silk. All bleeding points were tied with silk. The patient stood the operation well, and left the table without any stimulant. In the evening her pulse began to rise, but without other sign of hemorrhage. Stimulants and salt solution were exhibited, but with only temporary effect, and about twelve hours after the operation she died.

Examination showed free clotted blood and salt solution in the abdominal cavity. No bleeding point discoverable, but the hemorrhage probably occurred from some omental vessel.

Fibroids of Uterus, Abdominal Hysterectomy, Recovery. — A washerwoman, fifty-three years old, widow, entered the hospital January 1, 1894. Catamenia began at eighteen, induced by drugs. Sixteen years ago miscarriage at three months. Since then two children. Four years ago was treated in Boston City Hospital for grippe and "inflammation," with bearing-down pains. She then noticed a lump in left iliac region. Considerable menorrhagia and some leucorrhea. Has been treated by electricity. Tumor fills lower abdomen, nodular and slightly movable. Cervix is pushed to right and backwards.

January 19th. Operation in Trendelenburg position. Five-inch median incision below umbilicus. The uterus was of the size of the fetal head at birth, and was studded with multiple tumors. There were no adhesions. Broad ligaments ligatured and clamped and cut away. Peritoneum dissected away from uterus to junction of body and cervix, and a wire ecraseur placed at this level. The uterus was cut away, stump and cervical canal cauterized, and the stump supported by the pins. The abdominal wound was closed with stump in the lower angle. Sterile dressing.

On the eighth day stitches were out. On the twelfth day the stump was cut away and pins removed. At this time she complained of considerable pain on micturition. Citrate of potash and Poland water were administered; but in spite of all treatment, the urinary symptoms persisted. Thirty-four days after the operation there was considerable abdominal pain, relieved by morphia and high enemata of turpentine. The stump was trimmed every day and dressed with peroxide and corrosive.

On March 12th, fifty-three days after the operation, she was discharged well.

Multilobular Fibro-Myoma of Uterus, Abdominal Hysterectomy, Recovery.— A single woman, colored, cook, thirty-two years of age, entered the medical wards in September, 1893, and was treated for uterine fibroid of three and a half years' duration with localized peritonitis. Since then she has had pain in back and legs. General condition is good. The lower abdomen is filled with a solid, movable tumor. To the left of and above the umbilicus is another smaller tumor. By vagina the tumor seems to fill the entire pelvis and to be very firmly fixed. The cervix, very far anteriorly, is felt as a mere dimple.

Operation in Trendelenburg position. A six-inch median incision from one inch above the umbilicus exposed a uterus the size of a child's head, with four subserous fibroids. Many adhesions were torn away and the broad ligaments tied close to uterus and cut away. A wire ecraseur was placed around the cervix at the internal os, and the uterus was removed. The cervical canal was cauterized; many bleeding points in the torn adhesions were secured; and the abdominal wound was closed about the stump, which was secured with pins.

The patient made a good recovery from ether, but required morphia for pain referred especially to the rectum. On the ninth day the stitches were removed. On the eleventh day the clamp and stump were taken away without any bleeding. On the thirty-third day she was discharged, well.

July, 1895. Is in California working for a family, and has been there some months. Was perfectly well and able to work before leaving.

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[14] Dr. Davis's Anæsthetics, London, 1887.

Cancer of Uterus, Laparo-vaginal Hysterectomy, Recovery. — A woman, twenty-four years old, married, entered the hospital October 27, 1893. Her mother died of cancer of the uterus. She had an instrumental labor four years ago, the child dying at six weeks. She has never been strong. Catamenia regular, but very painful and very profuse. In last two months excruciating pain over pubes; foul leucorrhea, lately stained with blood. In poor condition. Cervix replaced by cauliflower growth, granular and bleeding easily. Induration in both culs-de-sac. Ovaries normal. Fundus uteri movable. The cervix was thoroughly curetted.

Operation, December 1st. With the patient in the lithotomy position an incision was made about the cervix, and the uterus freed from attachments to half way up the body. The vagina was packed with sterile sponges, and the patient placed in the Trendelenburg position. A five-inch median abdominal incision exposed the intestines, which were walled off with gauze. The broad ligaments were tied off with silk. The peritoneum was separated down to the vagina. The uterine arteries were tied separately and the uterus removed. Although the vagina was found to be infiltrated with the disease, the poor condition of the patient rendered further procedure inadvisable. The peritoneum was sewed over the vagina and the abdominal wound closed without drainage. Stimulants were administered, with heaters, and the foot of the bed was raised.

There was considerable pain after the operation, which persisted until discharge. The pain was in the lower back, and was only partially relieved by drugs. Vaginal douches were employed for a few days. On the eighth day the stitches were removed, and forty-one days after the operation she went to Waverley to gain strength for secondary operation upon vaginal infiltration.

Dr. Whitney reported as follows: "Small, soft, fragmentary masses, which showed masses of epithelial cells infiltrating among the deeper structures of the uterus, with more or less round-cell infiltration."

This patient was examined by me in the winter of 1895. There was then an enormous infiltrating mass in the pelvis, and involving the bladder wall. On July 9th she was heard from still alive. Her emaciation and weakness was extreme at the time I saw her.

In connection with these cases of hysterectomy it seems appropriate to report the following case in which the fibroid was treated by removing the ovaries.

Fibroid of Uterus, Removal of Ovaries, Recovery. — F. C. R. entered January 2, 1895. Age thirty-nine, married sixteen years, and never pregnant. Is generally weak and debilitated. The fibroid was discovered nine years ago. A year later was curetted. Since then menorrhagia with some metrorrhagia. There have been no gushes of blood, although she has fainted at times. The patient is anemic and hysterical.

January 7th. On opening the abdomen an apparently cystic tumor presented, but tap was dry. The tumor was so firmly imbedded in the pelvis that it was thought best not to attempt removal. Each tube was removed close to uterus, with its ovary. Stumps were cauterized. The wound was closed tight in two layers, and a dry dressing with swathe applied.

For the next two or three days the patient suffered great pain, probably ovarian. There was some vomiting, but little distention. On the fifth day her bowels were moved by cathartic. The pain disappeared; and with instructions to report for observation of tumor, she was, on the twenty-fourth day, discharged relieved.

Her physician, Dr. H. B. Palmer of Phillips, Me., makes the following report on July 6, 1895: "She still complains somewhat of soreness of muscles, probably due to muscular rheumatism. The fibroid has perceptibly diminished in size, and she has not menstruated since the operation. As the menorrhagia was the principal symptom which demanded relief, the operation must be regarded as successful."

Perforation of the Uterus by a Uterine Sound, Hysterorhaphy, Recovery. — A. T. T. first entered the hospital in 1892. She was then twenty-three years of age, had been married one year and nine months. After the birth of a child the catamenia had been very irregular, and she had suffered from leucorrhea. She was placed in the medical ward, and local treatment was employed without improvement. She was transferred to the surgical ward February 6, 1892. The examination made at that time showed enlargement and retroflection of the uterus, with chronic endometritis; enlargement of the left tube and prolapse of the left tube and ovary. The parts in the left side of the pelvis were very sensitive. The ovaries were removed March 16, 1892, and were found to be slightly increased in size, containing numerous retention cysts. They were non-adherent. The patient made a good recovery from the operation, but did not appear to be relieved of her symptoms. Pain and leucorrhea, with the usual train of nervous symptoms, continued. An examination in January, 1893, showed the uterus to be atrophied and somewhat retroverted. In April, 1893, the uterus was thoroughly curetted and the patient discharged shortly after much relieved.

In my service of 1894 the patient reappeared complaining of the old symptoms. An examination was made under ether with reference to a second curetting. During this examination the sound, introduced by a colleague, perforated the uterus, apparently penetrating the cicatrix of the right Fallopian tube. The abdomen was opened immediately, and a rent in the right fundus was found about one-half inch long. This was closed with four interrupted Lembert sutures of silk. An inspection of the uterus showed it to be greatly atrophied. In the right broad ligament no sign of adhesion existed. A careful inspection of the left broad ligament, which had been the seat of so much pain, showed a greatly enlarged and varicose vein, and a band of adhesion between the ligament and the sigmoid flexure. Two ligatures were placed around the vein, and the vessel was divided between them. The adhesion was also divided. The patient recovered without incident from this operation, and for a time seemed improved. A thorough course of local treatment during the following summer failed to arrest the uterine discharge and last winter the patient was still complaining of her old troubles.

Her last report, August 20, 1895, is more favorable. She considers that her operations have given her great relief, but she still suffers from leucorrhea.

Acute Intestinal Obstruction, Constricting Bands Divided, Recovery. — M. G., a strongly built laundress, entered October 22, 1894. Three years ago, when four months pregnant, she sustained a fall, followed by miscarriage and localized peritonitis. Never well since. Complains of anorexia and darting pains in lower abdomen, chiefly on left. Considerable bloating; abdominal distention. Passes much gas, and slightly constipated. Five days ago she felt a sudden, sharp pain in epigastrium. No vomiting and no chills. Bowels did not move, and have not moved since. Pain became worse. Last evening, vomiting, becoming stercoraceous. Cathartics were freely administered, but were of no avail.

On entrance, patient appears as a well-nourished, very stout woman. Face much flushed. Tongue slightly coated. Shallow, rapid (30) respirations. Vaginal and rectal examinations negative. She has had considerable morphia within the last few days. Much abdominal distention and tympany.

Diagnosis of obstruction, probably by band. Prepared for immediate operation.

Median incision, about five inches long, through very thick and fat abdominal walls, on median line below umbilicus and this point was selected as nearest to the seat of pain. Clear, serous fluid free in peritoneal cavity. Claret-colored, much-distended small intestines exposed. The hand passed into the abdominal cavity quickly detected constricting bands near the line of incision. The intestines lying over these bands were drawn out of the wound and protected by hot, sterile towels. The upper part of the ileum was found to be bound down and constricted by a narrow fibrous band, which was divided with scissors. Other adhesions broken up by fingers. Very little bleeding. Other constricting bands near uterine fundus were tied and divided. After a careful wiping with sterilized gauze the intestines were returned into the abdomen. There was no evidence of permanent injury to the intestines, and the external wound was closed with interrupted silkworm-gut sutures. A dry sterile dressing was applied, with pad and swathe.

The patient's condition at the end of the operation was very poor. Cyanosis, rapid respiration, and rapid weak pulse. Foot of bed raised. Oxygen and cardiac stimulants were used during completion of operation and afterward. An enema (cathartic) was given with no result. There was much distention and cyanosis. Some vomiting. Oxygen all night. On the next day, after continued ingestion of cathartics and enemata, a small amount of feces and considerable gas escaped. Stimulated all through this day. Several large dejections relieved the distention and abdominal pain.

She was stimulated with strychnine for three days, and required the rectal tube occasionally.

On the eighth day the dressing was taken down. There was much redness for the entire length of incision, with fluctuation. Incision gave escape to quite an amount of odorless, dark-brown fluid. Sinus packed with gauze and syringed daily with styrone.

Sinus gradually closed in; and November 28th, bowels being regular, and having had no symptoms she was discharged, well.

July 5, 1895. "Bloats much." Fairly well, except for two attacks about two months ago of constipation and vomiting.

The constricting bands in this case appear to have originated from the localized peritonitis which occurred at the time of her miscarriage.

Cancer of Rectum, Chronic Intestinal Obstruction, Littré's Operation, Recovery. — E. T., aged forty-six, entered January 24, 1895. One sister died of phthisis, but otherwise the family history is negative. Five years ago her uterus was curetted for menorrhagia, with resulting relief for two years. Three years ago a vaginal hysterectomy was done, the symptoms having recurred. Then she felt well, and gained until last April (1894), when she had pain in course of left sciatic nerve and along inner aspect of left thigh, the latter being relieved by defecation. There has been a tendency to constipation and gas formation; but by careful dieting and other expedients there has never been complete stoppage until during the past seven days — there having been no movement in that time. In this time she has vomited twice. The appetite is very poor. She has lost twenty to thirty pounds in weight in a year, and the left leg is especially atrophied.

She presented the characteristic cachectic appearance. The abdomen was much distended, and by rectum a gristly stricture reaching beyond the length of the finger was found.

On January 26th a five-inch incision was made in the left iliac fossa, and a knuckle of large intestine withdrawn. A bridge of skin was taken from the inner edge of the wound, passed through the mesentery under the bowel and sutured to the other edge of the wound. This was reinforced by gauze fastened by stitches. The bowel wall was stitched to the adjacent skin and protected by a dry dressing.

On the following day the loop of bowel was opened transversely, giving vent to large quantities of feces and gas.

Great relief was experienced from the operation. The movements were controlled by a gauze pad, and the wound was easily kept clean. Occasionally the distal end of the bowel was syringed with an antiseptic.

On February 14th she was discharged, much relieved.

The method employed in this case, suggested by Dr. S. J. Mixter, substitutes a flap of skin for the glass rod which is placed under the protruding loop of bowel. The object of this plan is to make a spur which will prevent all fecal discharge from passing down below the artificial anus. When the bowel has been cut across and has healed to the skin, there remain two distinct openings — one leading to the descending colon, the other to the rectum.

Patient reports, July 29, 1895, that there has been no symptoms of obstruction since the operation. The growth now involves the vagina and bladder. The patient takes about half a grain of morphine and thirty-five grains of phenacetine daily.

Chronic Intestinal Obstruction, Left Inguinal Colotomy, Death. — A man, sixty years old entered the medical ward December 19, 1893. Two years ago he had "dysentery," and since then has never been very well. Suffers from dyspepsia. These symptoms have been worse for the past month. Passage of feces always relieved the pain. Seventeen days ago he experienced a severe recrudescence of his symptoms, with vomiting and obstipation. Since then his bowels have moved only by enema. During the next week he did not improve, and was transferred to the surgical side. At that time he was much emaciated and very weak. The abdomen was so distended by gas that palpitation was unsatisfactory. He was fed by nutrient enemata, and prepared for operation for supposed ileo-cecal stricture.

A four-inch incision was made in the ileo-cecal region over the course of the ascending colon. The cecum was distended but normal. The hand detected a tight stricture of the sigmoid. The wound was closed and an incision made in the left iliac region, and the tightly constricted sigmoid flexure exposed. Owing to the poor condition of the patient, a resection was deemed inadvisable; therefore the bowel was sutured into the wound and the patient put to bed. Under the influence of stimulant enemata he made a good recovery from ether, and on the next day the intestinal wall was incised under cocaine, with immediate discharge of gas and feces. An oil enema was given through the opening, and a large amount of fecal matter evacuated. A dry dressing was applied to the wound and the patient stimulated.

During the morning the patient failed steadily, and at 12.15 P. M., twenty-four hours after the operation, he died.

Patients suffering from advanced intestinal cancer with prolonged chronic obstruction are poor subjects for surgical interference. I would advise in a case of this kind an incision through the abdominal wall with cocaine anesthesia — the bowel to be opened the following day. In this way not only is ether avoided, but all the attendant manipulations of an abdominal section. The method can be carried out easily as the abdominal walls are tense and thin.

Renal Calculus, Nephrotomy. — W. T. C., aged twenty-eight, a teamster, born in England and living in Cambridgeport, entered the hospital October 26, 1893.

When a year and ten months old he fell down stairs and had ever since suffered from pain in the right side. Eighteen years ago he had an attack of severe sharp pain in region of right kidney, shooting down into the testicle. He finally passed a stone about the size of a dried pea. Four years ago another stone was passed after a similar attack. For eighteen years there have been attacks of pain in the right side about every week. During the more severe of these there were chills and vomiting. Eleven days before entrance he had the last attack, of about twenty minutes' duration. But there has been a constant pain in the side ever since. He urinated every hour, there being no difficulty in urination but pain in the right groin preceding it. [The report on the condition of the urine is unfortunately lost from the hospital records.]

The examination of the abdomen was negative, except for tenderness over the region of the right kidney on deep pressure. Search for vesical calculus was without result. The patient was otherwise perfectly well but was totally disabled from work.

November 17th. An incision was made, five inches long, from the lower border of the ribs to the iliac crest, exposing the capsule of the kidney. Numerous adhesions were broken up, and four silk sutures were placed through the capsule and substance of the kidney by which it might be held in the wound, the hand being introduced into the wound so as to grasp the kidney. A calculus in the pelvis could be distinctly felt. A longitudinal incision was then made directly through the convex border of the kidney and through its substance into the pelvis, the knife being thrust through the organ until the point grated upon the stone. The bleeding which followed the withdrawal of the knife was most copious, but could be readily controlled by the finger introduced through the wound in the kidney. The stone, which was adherent, was held by the point of the fingers and was then removed with forceps. It was about as large as a peanut (as shown in the cut), and was composed of urates. The wound in the kidney was then packed with gauze, and the kidney was stitched into the base of the wound. The peritoneum was not opened. A gauze drain was placed in the lower angle of the wound and a sterile dressing applied. This required frequent changing because of the free staining with urine. The wound was irrigated with styrone solution. For five days the diet was limited to milk together with diuretics. On the fifth day the packing in the wound in the kidney was loosened, and two days later was removed. After ten days the urine passed from the bladder was free from blood. After two weeks urine ceased to come from the wound. During the day at the end of this time the patient had considerable pain in the right groin, which toward evening ceased. Later in the evening, after micturition, he noticed a long thread of gauze protruding from the meatus, which he withdrew. It had evidently passed down the ureter, becoming detached from the packing in the kidney.

December 22d. Five weeks after operation the wound had healed excepting a small granulating spot, and the urine was normal. He was discharged well.

The patient has been perfectly well since the operation; his attacks of renal colic have entirely ceased, and he has been actively at work since his convalescence.

It should be stated here that this case is one of nephrotomy on the otherwise healthy kidney, and not a case of incision of a pus sac containing a calculus. The two operations cannot be classed together.

(*To be continued.*)

Clinical Department.

FOUR MONTHS' HOSPITAL WORK IN ABDOMINAL SURGERY.

BY F. W. JOHNSON, M.D.,
Surgeon, Gynecological Department, St. Elizabeth's Hospital; Surgeon, Gynecological Department, Carney Hospital, etc.

The following operations were done during the spring of 1895, at the Woman's Charity Club, Carney, and St. Elizabeth's Hospitals. Of the forty-six, two died; one following a celiotomy for peritonitis and one following a hysterectomy.

The first case was one of peritonitis caused by a criminal abortion. Although she had been under observation for weeks, at no time did it seem wise to open the abdomen. She died the day following the operation (Case III, St. Elizabeth's Hospital).

The second case was in very poor condition from excessive loss of blood. As every means had been tried, without effect, at her last menstruation to check the flowing, it was thought unsafe to wait until menstruation appeared for fear she would bleed to death. She died three days after the operation. The autopsy showed no evidence of peritonitis (Case IV, Hysterectomies, St. Elizabeth's Hospital).

For suture material silk, silkworm-gut and catgut were used. In a large number of the cases catgut was the only material used inside the abdominal cavity. In Case VI, St. Elizabeth's Hospital, the *incision* was closed with catgut. The silk and silkworm-gut were made aseptic by prolonged boiling. They were kept ready for use in a 1 to 6,000 alcoholic solution of corrosive sublimate. After soaking in ether for several days and thoroughly stretching (the thorough stretching prevents kinking and twisting, which is so very annoying), the gut was cut into the desired lengths and baked for four hours at a temperature of 300° F. Bacteriological examinations made by Dr. J. H. Wright of gut prepared after this manner showed no living bacteria. I am afraid of the large-sized strands as it is difficult to sterilize their centres. Dr. Rice, who has had a large experience in sterilizing and examining catgut, says that certain varieties of catgut seemed to resist every known method of sterilization. I do not think it safe to trust those who make a business of sterilizing suture material. Aseptic silk sunk into the rotten tissues of a stump often becomes septic, and gives rise to trouble which continues until the silk is gotten rid of through the incision, bladder or intestines. I have had it escape by all these routes. This would be obviated by using catgut, but as the gut liquefies it makes a first-class culture medium for micro-organisms, and might be the starting-point for general infection. No attention was paid to sewing the peritoneum separately, and in all but one case the incision through the abdominal wall was closed with silkworm-gut.

In over one thousand cases of celiotomy I have never had a case of hernia except there had been deep suppuration in the line of the incision, or where prolonged drainage had been used. Every patient before getting about was provided with a suitably fitting abdominal supporter and was instructed to wear it for one year. The stumps were seared over with a Paquelin cautery to prevent infection of the ligatures by the cut end of the tubes or broad ligaments. Drainage was avoided if possible. When in doubt it was used. Some one has aptly remarked that drainage is an admission on our part of incomplete surgery. It should always be used when there is oozing. I prefer a large glass drainage-tube with *no* holes in the sides, which, if properly taken care of, is absolutely free from all danger. Gauze does not give so free drainage, must be used longer, and without anesthesia, causes severe pain on removal and a sinus is more apt to follow its use. Gauze soils the dressings and the edges of the wound. With the glass drainage-tube the dressings can be kept as sweet and clean as when put on. By bacteriological examination I have found the secretion in the glass drainage-tube on the third day free from pathogenic bacteria.

If, at the time of operation, septic pus or fluid gets into the peritoneal cavity I do not believe drainage or irrigation of *any* kind will prevent peritonitis or save the patient. Fortunately, nine times out of ten, the pus and fluid in the tubes and ovaries is sterile, as I have had verified by repeated bacteriological examinations. In abscess of the ovary the worse the fluid looks and the more rotten it smells the more likely it is to be sterile.

Where drainage is used the silk ligatures about the pedicles and in the broad ligament are very liable to become septic, and then a sinus is apt to remain until the silk comes away. I have known such a sinus to remain open for four years, finally closing after the discharge of six or seven knots of silk. Where the intestine, bladder, or ureter is found seriously injured by disease, or where either is seriously injured in separating adhesions, drainage through the incision should be used for a few days. Drainage should be used if the intestine has been opened and there has been fecal extravasation. No drainage is called for where a healthy intestine has been repaired.

Irrigation was used but a few times. Sponging was considered far better. If non-sterile pus or septic fluid escapes into the peritoneal cavity, irrigation, no matter how practised, does little except increase the chances of peritonitis and death by disseminating the poisonous material among the intestines.

WOMAN'S CHARITY CLUB HOSPITAL.

CASE I. F. C., aged twenty-nine years, married.

Present Complaint: Pain in the lower part of abdomen, with sagging and dragging down.

Marital History: Two children; youngest two years old. One miscarriage four years ago.

Menstruation began at fourteen years; flow moderate, lasting four days, every two weeks; severe dysmenorrhea thoroughout sickness. Menstruated every four weeks until birth of first child.

Diagnosis: Retroversion. Uterus not replaceable.

Operation February 14th. Moderate amount of adhesions. Fimbriated end of left tube occluded. Left ovary enlarged and cystic. Left tube and ovary removed. Right tube and ovary not removed. Uterus fastened up and forwards by ventral fixation. Peritoneum covering right tube and right broad ligament studded with pearl-colored nodules the size of mustard-seed shot.

Discharged March 6th. Uterus in good position.

CASE II. E. B., aged twenty-six years, married.

Present Complaint: Severe pain in the left ovarian region, requiring morphine at menstrual periods for its relief. Uterus curetted last fall with no benefit.

Marital History: Never pregnant.

Menstruation began at fourteen years, lasting four or five days, dysmenorrhea beginning a week before the flow and lasting until the second day.

Diagnosis: Ovaries prolapsed and adherent.

Operation February 24th. Uterus curetted before abdomen was opened. Left tube curled about the ovary and adherent to it. Fimbriated end of tube adherent to ovary. Left ovary was the seat of a large hematoma. Left ovary and tube removed. Right ovary contained a small cyst. This was opened, scraped, cavity closed with silk, and ovary dropped back.

Discharged March 16th. Symptoms relieved.

CASE III. A. R., aged twenty-four years, married.

Present Complaint: Pain in the right ovarian region extending down the right thigh and leg.

Marital History: Two children. No miscarriages.

Menstruation began at fourteen years; flow small, every four weeks.

Diagnosis: Under ether, the left ovary was found to be prolapsed, enlarged and adherent.

Operation March 7th. Uterus had been curetted in February for endometritis. Left ovary was enlarged and cystic. Right ovary filled with retention cysts. Both tubes were firmly fastened to posterior surface of broad ligament. Both were thickened, and their fimbriated ends were completely occluded by adhesions. Both tubes and ovaries removed.

Discharged March 27th. Symptoms relieved.

CASE IV. N. R., aged thirty-nine years, married.

Present Complaint: Weakness. Pain in back and lower abdomen.

Marital History: Two children. One miscarriage last March; at that time had a severe attack of peritonitis.

Menstruation began at fourteen years; flow considerable, lasting from six to eight days, regular; dysmenorrhea before and during the flow.

Diagnosis: Fluctuating mass filling the left side of the pelvis and pushing the uterus to the right. Temperature before the operation varied from 102° to 104°.

Operation, March 12th. While enucleating a large abscess of the left ovary it broke, pouring foul-smelling pus into the abdominal cavity. On the right side there was a very much enlarged ovary and a hydrosalpinx. Both tubes were much thickened and with the ovaries were fastened to the posterior surface of the broad ligament. There was such free oozing from the beds out of which the left and right ovaries were dug that drainage was used. No irrigation. There was quite free bleeding for twelve hours, at which time the glass drainage-tube was removed. By carelessness two pieces of gauze were left in the abdominal cavity, and delayed convalescence until they were removed.

Discharged May 19th, feeling well. Uterus large and heavy, broad ligaments boggy. The uterus would have been removed had her condition allowed of it.

CASE V. A. M. S., aged twenty-eight years, married.

Present Complaint: Severe pain in the left ovarian region. Weak feeling in back. Unable to work.

Marital History: No children. One miscarriage eight weeks ago.

Menstruation began at sixteen years; flow little, lasting three or four days, regular; dysmenorrhea the first two days.

Diagnosis: Salpingitis (probably pyo-salpinx).

Operation, March 12th. The tubes were occluded and the fimbriated ends were adherent to the uterus. Ovaries cystic. Both tubes and ovaries removed.

Discharged April 3d. Relief of all symptoms.

CASE VI. F. S., aged thirty years, married.

Present Complaint: Backache, pain in left ovarian region, and pain in left thigh and leg when walking.

Marital History: Three children, youngest two and one-half years old. No miscarriages.

Menstruation began at fourteen years, regular; slight amount of dysmenorrhea.

Diagnosis: Retroversion, with adhesions.

Operation, April 7th. The anterior parietal peritoneum was almost universally adherent to the intestines. Right ovary enlarged and cystic. It, with the right tube, was removed. After replacing the uterus it was kept up and forwards by ventral fixation.

Discharged May 5th. Uterus in good position.

CASE VII. M. W. H., aged thirty-seven years, married.

Present Complaint: Severe pain daily in right lower half of abdomen, severest in region of appendix. This pain is brought on and made worse by standing. Headaches. Was told she had appendicitis last summer. In bed a great part of the time.

Marital History: One child. No miscarriages.

Menstruation began at fourteen years, regular; flow moderate, lasting four days; dysmenorrhea.

Diagnosis: Nothing found. Advised exploratory incision. She had been sent in for removal of the appendix.

Operation, April 8th. No trouble found with the appendix. No evidence of former peritonitis. Liver less than one-half its normal size and very hard. Right ovary cystic. Right ovary and tube removed.

Discharged May 1st. Relief of all abdominal pain.

August 1st. Not gained much in strength. In bed part of every day. Pain, at times severe, in the right lower half of the abdomen.

CASE VIII. I. D., aged twenty-nine years, married.

Present Complaint: Constant pain in the left ovarian region. Severe dysmenorrhea. Supra-orbital and occipital headaches.

Marital History: Two children. No miscarriages.

Menstruation began at sixteen years; flow free, lasting from six to seven days, regular; dysmenorrhea.

Diagnosis: Retroflexion, with adhesions. Uterus non-replaceable.

Operation, April 9th. The right ovary with its enlarged Fallopian tube was glued to the uterus. The three organs were in the hollow of the sacrum. Right tube and ovary were removed and ventral fixation performed.

Discharged May 5th. Uterus in good position.

CASE IX. M. M. H., aged fifty-one years, married.

Present Complaint: Sore spot in right iliac region. Pain in the pelvis and limbs. Tired feeling all the time.

Marital History: No children. No miscarriages.

Menstruation began at fourteen years; always irregular, lasting three or four days; dysmenorrhea the first day. Menopause at forty-three.

Diagnosis: Uterus fixed by adhesions on the right side. Abundant evidence of former pelvic peritonitis.

Operation, April 11th. The right ovary, which was small and stone-like in feeling, was shelled out of the adhesions and removed with the tube. The left ovary was small and hard like bone. It was removed with the tube.

Discharged May 9th. Relief of all symptoms.

CASE X. A. T., aged forty years, married.

Present Complaint: Pain in left ovarian region for four years. Backache. Sagging and dragging down. Loss of flesh and strength. Unable to attend to her work.

Marital History: Several children.

Menstruation began at fifteen years; flow moderate, lasting seven or eight days, not painful.

Diagnosis: Left ovary prolapsed and adherent. Neurasthenia. Cervix was operated on two years ago.

Operation, April 23d. Both ovaries filled with retention cysts. Adhesions on the left side. Both ovaries and tubes removed.

Discharged May 11th. Relieved of pain.

CASE XI. L. A. B., aged thirty-seven years, married.

Present Complaint: Constant pain in the right ovarian region. Backache, and frequent pain in left ovarian region. Almost bed-ridden.

Marital History: Three children. Youngest four years old. No miscarriages.

Menstruation began at seventeen years, always irregular; dysmenorrhea the first two or three days.

Diagnosis: Endometritis. Hyperesthesia of the lower part of the abdomen.

Operation February 28th. Uterus curetted. No benefit.

Operation, April 25th. The right ovary was about the size of the tip of the little finger, and as hard as sclerosed tissue. It was removed with its tube. In the left ovary there was a good-sized hematoma. This was opened, cleaned out, and the cavity closed with silk. Ovary dropped back.

Discharged May 18th. Well.

CASE XII. J. G., aged thirty-eight years, married.

Present Complaint: Pain throughout the whole of the lower part of abdomen, but especially severe in the left ovarian region. Constant feeling of pressure and bearing down. Backache. Obstinate constipation. Unable to work.

Marital History: Never pregnant.

Menstruation began at thirteen years; flow profuse, lasting five days, regular; pain throughout.

Diagnosis: Fibroid of the uterus firmly fixed in the pelvis.

Operation, April 30th. The fibroid, the size of a cocoanut, was interstitial, and firmly fixed in the pelvis by adhesions to the rectum and pelvic wall. The tubes and ovaries were adherent to the fibroid uterus and intestines. After separating all adhesions both tubes and ovaries were removed.

Discharged May 22d. No flowing since operation.

August 1, 1895. Patient wrote that she had been free from all pain since the operation.

CASE XIII. N. C. B., aged thirty years, married.

Present Complaint: Pain in the lower part of the abdomen. Sagging and dragging down. Backache. Unable to work.

Marital History: No children. No miscarriages.

Menstruation began at fourteen years; flow scant, lasting two or three days, regular.

Diagnosis: Retroversion, with adherent tubes and ovaries.

Operation, May 2d. Tubes and ovaries adherent to the uterus and the posterior surface of the broad ligament. Intestine adherent to the left tube and ovary. Both tubes and ovaries removed.

Discharged May 26th. Symptoms relieved. Uterus in the first degree of retroversion.

CASE XIV. E. J., colored, aged twenty-eight (?) years, single.

Present Complaint: Severe attacks of colicky pain in a large ventral hernia which she has had for nearly a year. The hernia followed a laparotomy which was done for an ovarian cystoma. Totally incapacitated for work. Obstinate constipation. Dragging down from both loins.

Menstruation began at fifteen years; moderate flow, lasting seven days, regular.

Diagnosis: Ventral hernia the size of an adult head. The hernia occupied the whole length of the former incision.

Operation, May 2d. The bag of skin made by the protrusion of the abdominal contents was removed in an oval piece, care being taken to go well back on to unstretched skin. The omentum and intestines were adherent to the peritoneum of this oval piece and to the parietal peritoneum in the neighborhood of the hernial opening. All adherent omentum was removed. A small cystoma of the left ovary, with the tube which was the seat of hydrosalpinx, were removed. On the right side the silk ligature which had constricted the pedicle of the cystoma was found and removed. One-third of the right ovary and the right Fallopian tube had been left. Both were removed. The opening in the abdominal walls was closed by three layers of interrupted silkworm-gut sutures.

Discharged May 27th. Well.

CASE XV. E. C., aged thirty-four years, married.

Present Complaint: Constant pain in the lower part of the abdomen, especially marked in the left ovarian region. Obliged to give up work. An attack of nausea every week or ten days. Has had three attacks of peritonitis during the past two years.

Marital History. No children. One miscarriage at seven months. Peritonitis followed the miscarriage. Dates her trouble from this miscarriage which was twelve years ago.

Menstruation began at fifteen years: flow profuse, lasting one week, regular, pain lasting throughout sickness.

Diagnosis: Chronic salpingitis and ovaritis. Uterus with tubes and ovaries bound together in one mass.

Operation, May 16th. The thickened and adherent tubes were dug out of the posterior cul-de-sac, and, with the ovaries which were buried in adhesions, were removed. The fimbriated end of both tubes was adherent to intestine. On account of the free oozing from the posterior cul-de-sac and the posterior surface of the uterus a glass drainage-tube was used for forty-eight hours. Had she had strength enough, the uterus would have been removed.

Discharged June 15th. Well.

CASE XVI. K. G., aged twenty-two years, married.

Present Complaint: Backache and pain in the left ovarian region.

Marital History: No children. No miscarriages.

Menstruation began at twelve years; flow slight, lasting three days, regular; dysmenorrhea since marriage.

Diagnosis: Chronic salpingitis.

Operation, May 20th. Ovaries and tubes matted together by numerous and strong adhesions in the hollow of the sacrum. Tubes enlarged and ovaries cystic. Patient took ether very poorly, and ceased breathing several times. The tubes and ovaries were literally ripped out, it taking all my strength to break some of the adhesions. A glass drainage-tube was left in for twelve hours on account of the oozing.

Discharged July 10th. Good condition.

CASE XVII. M. J. W., aged forty-two years, married.

Present Complaint: Obliged to be in bed most of the time on account of backache, pain in the lower part of the abdomen, and bearing down. Abdomen enlarged and very sensitive to the touch. Uterus prolapses outside the body and causes great inconvenience in walking.

Marital History: Four children, youngest nine years old. Two miscarriages.

Menstruation began at fourteen years. Menopause at forty-one.

Diagnosis: Ovarian cystoma. Uterus hangs between the thighs nearly down to the knees.

Operation, May 22d. An ovarian cystoma weighing eight and one-quarter pounds was removed from the left side. Right ovary was cystic and it with the tube was removed. After drawing the uterus up into the abdominal cavity its posterior surface was fastened to the anterior abdominal wall by four silkworm-gut sutures.

Discharged June 14th. Relieved. To return for anterior and posterior colporrhaphy and perineorrhaphy. Uterus in good position.

CASE XVIII. J. W. W., aged thirty-three years, married.

Present Complaint: Pain in the lower part of the abdomen since birth of child eight years ago. Following labor had an attack of peritonitis confining her to bed nine weeks. During this time an abscess opened into the rectum.

Marital History: One child. No miscarriages.

Menstruation began at fifteen years; flow moderate, lasting four or five days; severe pain during the flow.

Diagnosis: Pyosalpinx.

Operation, May 22d. Intestines bound to both tubes and ovaries. Tubes enlarged and thickened and bound to the rectum. The rectal adhesions were separated with great difficulty. Free oozing from rectal wall and Douglas's cul-de-sac. Glass drainage for twenty-two hours.

Discharged June 17th. Well.

CASE XIX. M. E. G., aged twenty-seven years, married.

Present Complaint: Pain in both ovarian regions and constant backache. Dysmenorrhea.

Marital History: No children. No miscarriages.

Menstruation began at fifteen years; flow quite free, lasting seven to eight days, irregular; severe pain throughout the flowing.

Diagnosis: Chronic salpingitis and retroflexion. Uterus with broad ligaments bound in the pelvis by a mass of adhesions.

Operation, May 28th. The enlarged tubes were bound up with the uterus, omentum and intestines in one mass in the pelvis. In separating the uterus from the rectum the serous coat of the gut was stripped off for some two inches, and its muscular coat was torn in two. The hemorrhage was so free and the injury so far down in the pelvis narrowed by adherent intestines that I could not get at the injury to repair it. A glass drainage-tube was inserted. Several ounces of blood were sucked from the tube, but only serum was obtained at the end of twenty-three hours.

Discharged June 28th. Well.

(*To be continued.*)

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A CASE OF CANCER OF THE CEREBELLUM, METASTATIC FROM THE BREAST; DEATH; AUTOPSY.

BY EDGAR GARCEAU, M.D.,
Surgeon to Out-Patients, Free Hospital for Women, Boston.

MRS. D. was an Englishwoman, forty-nine years old. She was of medium height and well developed, being inclined to be somewhat stout. After the birth of her only child, eighteen years before her death, she had an abscess of the right breast; she always felt the "changes of the weather" in that breast afterwards. Her grandmother is said to have died of mammary cancer.

About two years before her fatal illness began, she had a cancer removed from the right breast by Dr. Maurice H. Richardson at the Massachusetts General Hospital. The hospital records say that the tumor was the size of a small apple, and that the axilla was opened and a few very small glands removed. Examination by Dr. W. F. Whitney showed the growth to be cancer combined with chronic interstitial mastitis.

Since this operation she was very well, and had no inconvenience whatever with the exception of diminution of vision of the left eye, which slowly and steadily increased. The vision began to be affected shortly after the operation. Her general health and strength, however, since the operation were very good, and she began to think that her lease of life was going to be long, when suddenly, without any warning whatever, she began to have a severe agonizing pain in the upper occipital region, radiating into the right eye and sometimes into the left eye. It was constant night and day, and gave her no rest. The most comfortable position was lying on the left side with the knees flexed, keeping perfectly still, for the slightest movement accentuated the pain. When the pain came on vertigo and vomiting accompanied it, the vomiting being uncontrollable and not dependent on ingestion of food.

Physical Examination. — Over the right breast was a scar which was deeply indurated, but no signs of malignant degeneration were present. The axillary glands were not enlarged. The lungs were normal. Pressure over the spine and head did not cause pain. Extending the lower limbs caused increase of pain in the head. The tongue protruded in a straight line. Temperature 98.4°, pulse 72. Pupils of the eyes of normal size and equally dilated. On examination with the ophthalmoscope choked disk was found in both eyes. Hearing was normal. Answered questions coherently and intelligently, though slowly and with effort. Features dull and apathetic. Somnolency marked. Skin dry and cool. On inquiring further into the eye symptoms, it was found that on some days the vision in both eyes was fairly good, while perhaps the next day it might be wholly gone. When she was very weak, she had a sensation as though she were sinking into an abyss. The sensation was horrible.

The diagnosis of tumor of the cerebellum was made, and she was sent to the Boston City Hospital. There the nature of the disease was fully explained to her, and also the great risk incurred in operating. She fully appreciated her condition, for her intelligence was unimpaired, and she declined to submit to an operation.

She lived just nine weeks from the time the pain began in the occipital region. During this time nothing controlled the vomiting except cocaine, and the relief with this drug lasted only a few days. How she lived during all that time was a mystery, for she took nothing except a little whiskey and a little milk now and then. Large doses of morphine had to be given for pain. On the day before she died she had two severe convulsions affecting the right arm, right lower limb and head, the latter being drawn to the right. She had another convulsion on the day of her death.

The Autopsy was made by Dr. J. C. D. Pigeon. Head only opened. The skull was very thick. Dura mater not inflamed at any portion. Very little arachnoid fluid. Sinuses contained but little blood, and that was very fluid. The outer portion of the right half of the cerebellum was occupied by a dense, hard tumor the size of a good-sized olive, and about the same shape as an olive; it was quite by itself, and was held loosely in position by fragments of disintegrated cerebellar tissue. Besides this single large tumor there were also several smaller ones the size of green peas, all imbedded in the same disintegrated tissue. They were placed irregularly along the under surface of the cerebellum extending towards the fourth ventricle, none of them, however, encroaching on the fourth ventricle. There was no pressure anywhere by a collection of fluid; in fact, in the vicinity of the tumors there was rather less resistance than on the other side of the cerebellum. On examining the cerebrum, two other tumors were found. One was at the posterior portion on the right, at a part exactly corresponding to the cerebellar tumors and lying immediately above them; the other tumor was on the left hemisphere at a point two and one-half inches from the upper extremity of the fissure of Rolando and anterior to it; being at the same time somewhat nearer the median line. It was this tumor undoubtedly that caused the convulsions affecting the right side. Both tumors in the cerebrum were the size of a cherry. All the tumors were on section streaked with black.

A microscopical examination was made by Dr. J. J. Thomas, and his report is as follows: "The tumor is seen to consist essentially of larger and smaller columns and masses of epithelial cells, lying in a rather loose stroma of connective tissue. The epithelial cells have vesicular nuclei and a considerable amount of protoplasm, and resemble in their appearance and arrangement the cells seen in mammary cancer. The connective tissue stroma is edematous in places, and is nowhere dense or great in amount in proportion to the masses of epithelial cells."

Anatomical Diagnosis. — Metastatic carcinoma, of the mammary type.

This case was a typical one of cerebellar tumor. The cardinal symptoms — headache, pain in the occipital region, vertigo, vomiting, somnolency and stupor, and choked disk — were all present. But the most surprising feature is that no symptoms of involvement of the cerebrum were exhibited until the day before death, it was then only that the patient had convulsions. Another point of interest is the fact that the cancerous disease did not reappear either in the breast, lung, or axilla. It is also worthy of mention that the disease in the cerebellum was on the same side as the affected breast. Nothing positive can be deduced from this, however, because there was also a tumor in the left hemisphere. The most excruciating pain — that radiating from the occiput to the right eye — was on the same side as the disease. It is interesting to note that an operation would have been entirely useless if it had been performed, on account of the involvement of the left hemisphere; the growth here, it will be remembered, gave absolutely no symptoms until the day before death.

NOMINATIONS FOR OFFICERS OF THE ROYAL SOCIETY. — Sir Joseph Lister has been nominated by the retiring President and Council for election as President of the Royal Society. The election will take place at the anniversary meeting on November 30th. Professor Michael Foster has been nominated for re-election as one of the Secretaries, and among those nominated for election as members of Council are Sir Joseph Fayrer and Dr. W. H. Gaskell.

LUPUS ERYTHEMATOSUS TREATED INTERNALLY WITH PHOSPHORUS.

BY H. L. JENCKES, M.D., GALENA, ILL.,
Member of the American Medical Association.

WE have very little positive knowledge of the nature and cause of lupus erythematosus. It is comparatively a rare disease, occurring only, according to the reports of the New York hospitals, 97 times in 20,798 cases of miscellaneous skin diseases. The uncertainty of external treatment scarcely deserves mention, and in this paper reference to the internal treatment only will be made.

Mr. B. consulted me some four years ago for a diseased condition of the skin of the left cheek. At that time there was a dull red patch the size of a half-dollar, which he said was gradually enlarging. It was partly covered with thin, adherent fine scales. It was not painful, but at times the itching sensation was quite annoying. This patch, with its sharply circumscribed outline, its surface studded with plugged sebaceous openings, and adherent fine scales, seemed a typical patch of lupus erythematosus. The usual methods of external treatment were instituted, and were faithfully carried out for five or six months. During this time the diseased surface had considerably extended, and Mr. B. concluded, as he had received no benefit, to stop treatment.

Although the disease continued to gradually extend, it was about a year before he again began treatment. And during the next two years he was treated by several physicians, one of them quite a competent man, but, as he says, "without benefit." The disfigurement and annoyance were now very great.

He consulted me again in February, 1895. The lesions at this time involved most of the left cheek, the whole of the nose, and nearly half of the right cheek. The tendency to peripheral extensions had been a marked characteristic of the disease from the beginning. This dull-red and infiltrated surface was tender to pressure, and at times painful. A number of careful examinations differentiated the disease from that tubercular disease of the skin described by Brocq as "erythematoid lupus vulgaris. From lupus vulgaris it was distinguished by the absence of ulcerations so commonly seen in that disease, and by the absence of the small yellow nodules. These nodules, although carefully searched for at different times, could not be found.

All external treatment was now abandoned, and the patient was given a solution of phosphorus prepared as directed by Professor Berkley in his article in the *American Journal of the Medical Sciences* for April, 1893, namely:

℞	Phosphorus	gr. vi
	Absolute Alcohol	℥ xxx

To be dissolved with the aid of heat and agitation, and then mixed, while still warm, with the following mixture, also warm:

Glycerine	℥ ixss
Alcohol	℥ iss
Essence of peppermint	℥ ss

Each drachm contains one-twentieth of a grain of phosphorus.

Of this, twenty drops were at first taken in water three times daily, after meals. The dose was gradually increased until at one time he was taking forty drops after meals. This amount did not produce any gastric disturbance, but the large doses were only taken for a short time. After taking the remedy for a few weeks, he noticed that the burning and tenderness were gradually disappearing; and as the color began to fade, he frequently remarked, "Ich glaube sic heben die recht Arzenein gefunden."

At the end of the second month of treatment the improvement was very noticeable. The dull-red color, which heretofore was so noticeable, was gradually disappearing. At the end of five months of treatment the improvement was so great that he considered himself cured. The red, inflamed, and infiltrated conditions had disappeared. The integument over the diseased area had assumed quite a healthy appearance, although in places it was somewhat scarred. The livid line of demarcation which had separated the diseased from the healthy skin was no longer perceptible.

After several years of ineffectual external treatment the lesions yielded to the internal administration of phosphorus.

In the article previously referred to, Professor Berkley states, that chronic cases of lupus erythematosus seem as much benefited by this treatment as do acute cases.

I have made no attempt in this paper to discuss the nature of lupus erythematosus; but, judging from the well-known action of phosphorus on the nervous system, I am led to believe that the lesion is of neurotic origin. In administering phosphorus the action of the remedy upon the disgestive organs should be carefully watched; and if unpleasant symptoms arise, they should be promptly met by appropriate treatment.

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FATAL CASE OF ACUTE ALCOHOLIC POISONING IN A CHILD.

BY WM. H. DEVINE, M.D., SOUTH BOSTON.

September 24, 1895, I was summoned to attend M. M., age four.

The history is as follows: That morning at 5.30 the father, while preparing to start for his daily work, noticed his little girl playing with a bottle of whiskey which she had obtained from the shelf of the mantel-bed in which she was sleeping. On taking the bottle away, he noticed a strong odor of liquor from her; that her face was flushed, etc. In a short while she sank into a stupor. The father examined the bottle, and allowing for a small amount previously used, he thought the child had taken about two ounces. Not anticipating any serious results from the occurrence, he went to his work, but was summoned in a few hours by a messenger, who stated that the child had been unconscious since his departure. On returning to the house, he sent for me; but as I was not at home, Dr. W. J. Gallivan was summoned, pronounced it a case of acute alcoholic poisoning, and gave appropriate treatment. When I saw the child at 1.45 P. M., she was in a deep stupor — pulse 120, respiration 40, and the skin warm (temperature not taken). An examination, two hours later, revealed signs of pulmonary edema — pulse 160, respiration 60, temperature 106°, cyanosis. The child died at 3 A. M., twenty-two hours after the fatal dose was ingested.

The interesting points in connection with the case are, the small amount of alcohol taken and the rapid progress to fatal termination with pulmonary edema. In this connection it is well to consider the importance of carefully watching the dose and effects of alcohol in children, particularly in chest cases, as an overdose might produce pulmonary edema, and cause an unfavorable termination in some of these cases.

The treatment consisted of enema of hot water, hot mustard foot-bath, ammonia carb. (one-half a grain), tinct. digitalis (three minims once in three hours), also a mixture of spirits æth. nitros and liq. ammon. acet. No emetic was given, for the child was not seen by the physician till five and one-half hours after the poison was taken, and it was then absorbed.

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Medical Progress.

RECENT PROGRESS IN LARYNGOLOGY.

BY A. COOLIDGE, JR., M.D.

THE VASCULAR MECHANISM OF THE NASAL MUCOUS MEMBRANE.

Wright[1] describes the histology of the blood-supply of the erectile tissue of the turbinates and its relations to certain pathological processes. There are no specially adapted muscles to compress a few veins, as in the penis, and there is no tunica albuginea to exert compression. The various elements of the nasal mucous membrane are supplied with a large amount of muscle fibres, even the smaller arterioles, and especially the veins, showing well-developed muscular tissue in their walls, while the areola tissue in the neighborhood of veins and sinuses, is also supplied with it. The radial arteries and veins pass through various bony canals into the nose. The artery will evidently compress, when dilated, its accompanying vein against the bony walls. There is a similar mechanism where the arterial branches and their veins lie in the deep or periostial layer of the mucous membrane. Veins may also be compressed between the periostial layer and the elastic fibres and glands external to it, by engorgement of superficial tissues. The distribution of the capillaries is such that there may be a transudation of serum to the surface directly from the vessels, especially in the olfactory region. A special network of small veins surrounding the mouths of the glands explains the phenomenon observed in cases of coryza, when the mucous secretion increases as the vascular tension relaxes.

MICRO-ORGANISMS IN THE HEALTHY NOSE.

Thomson and Hewlett[2] published the results of their investigation to determine the number of micro-organisms found on the mucous membrane of the nasal cavity in health. Previous observers have differed on this question, and it is commonly thought that the healthy nose contains many micro-organisms. The authors conclude that in the dust and crusts of mucous and *débris* deposited among the vibrissæ in the vestibule of the nose, micro-organisms are never absent and are generally very abundant, but on the Schneiderian membrane the reverse is the case. In 80 per cent. of their observations no organisms whatever were found and the mucus was completely sterile. Occasionally they occur, but under normal conditions they are never plentiful, and the presence of pathogenic organisms must be infrequent. In making these observations great care is necessary to avoid contamination with the lining of the vestibule, even when this source of error has been realized. These observations indicate clearly the necessity of a thorough disinfection of the vestibule as a preparation for intranasal operations.

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[1] American Journal of Medical Sciences, May, 1895.

[2] Medico-Chirurgical Transactions, vol. lxxviii.

ETHMOIDITIS.

In a discussion on the surgical treatment of the accessory cavities of the nose, at the recent meeting of the British Laryngological Association, a short, concise review of the subject was given by Bosworth. The question of treatment deals with retained pus. The indications are to open the cavity, drain out the pus, and thoroughly disinfect. In the ethmoid cells we have to deal with a kind of honeycomb bone, a mass composed of a large number of cells, each of which constitutes a small cold abscess, which from a surgical point of view is to be treated. The indications are to open every one of the little cells and thoroughly disinfect them. The galvano-cautery involves great risks in this region. A hard, stiff spoon is not an efficient instrument, neither is a curette. The author prefers a burr driven by a dental engine. The anterior portion of the middle turbinate is first removed, and the cells then entered with a burr three-sixteenths of an inch in diameter. These cases do not always yield readily to treatment. It is a delicate work in a dangerous locality, close to the base of the brain and to the orbit.

Delavan[3] believes that, in general, suppurative disease of the ethmoid cells is usually caused by some acute process attended with blocking of their normal outlets. The disease consists in inflammation of the lining of the cavity, possibly from entrance into it of an infectious element. It cannot be too strongly urged that in case of severe coryza the earliest intimation of involvement of any of the sinuses should be taken in hand and attention paid to allaying the irritation and keeping the outlets of the sinuses as free as possible. In chronic disease of the ethmoid cells drainage and persistent cleansing are required. If necessary, the anterior portion of the middle turbinate bone must be removed. The removal of all polypi is of course essential. Having reached the orifices of cells, a thorough and persistent cleansing is in some cases sufficient to remove the trouble; if not, the cells themselves must be opened.

Bryan[4] mentions among the earliest symptoms of abscess of the ethmoid cells pain, neuralgic in character, referred to the bridge of the nose and extending outwardly along the infra-orbital ridge. The middle turbinate may or may not be enlarged. In simple cases the author prefers a sharp curette for the opening of the individual cells. In case the deeper or fronto-ethmoidal cells are involved we should not attempt to open them through the nose, but the case should be treated as one of frontal sinus abscess, of which this condition is a frequent complication.

THE PREVALENCE OF ADENOID VEGETATIONS.

The recent death of Dr. Wilhelm Meyer in Copenhagen, who originally called attention to the prevalence and importance of adenoid vegetations, adds additional interest to an article[5] written a short time before his death, on the geographical distribution and historical evidence of these growths. As these vegetations can be shown to be present in small amount in a very large number of children who exhibit no symptoms from them, the reported percentage of children with the disease in any community must depend upon the individual observer. Dr. Meyer has received reports from distant parts of the world, and comes to the conclusion that a warm climate is less favorable to the development of the growth than a colder one. The Mongolian race is as subject to it as the Arian. It is prevalent among the children of the Esquimaux, the North American Indians, and the Chinese, but is not often found in the East India Islands. The historical evidence of its existence in the past is found in the statues and portraits in different collections, some of which show the characteristic facial expression. From these Dr. Meyer concludes that adenoid vegetations have probably existed since the early ages.

THE ETIOLOGY OF LACUNAR TONSILLITIS.

B. Fraenkel[6] contributes a paper on the etiology of this disease. It has been noticed that acute follicular tonsillitis occurs not infrequently after intranasal operation, especially when the galvano-cautery is used. When arising from this source it seems to resemble in all respects the spontaneous variety. This seems to suggest that something is carried by the lymph or blood circulation from the nose to the tonsils which starts up inflammation in the latter. The author believes that it is much more likely that tonsillitis arises from infection through the lymph channels from the nose or other region than that the exciters of inflammation make their way into the tonsils by the same route by which the leucocytes make their way out. It is generally accepted that chill may be the cause of a tonsillitis. This is probably due either to diminishing the resistance to the invasion of infection, or by producing primarily a nasal catarrh, which secondarily finds its way into the tonsils through the lymphatic vessels.

SIMPLE TONSILLAR ULCERATION.

Moure[7] describes an ulcer of the tonsil, resembling the deep punched-out ulcer of late syphilis, but not due to the infiltration of any specific disease. He has seen it especially in the spring and autumn, and in persons of from twenty to thirty years of age, often medical students. Although undoubtedly of microbic origin, the author has not been able to discover any bacillus which he considers the cause of the disease. He believes that it comes from the dilatation of one or more lacunæ, with ulceration of their walls and of the tissue which separates them from the exterior, forming an ulcer with a crater-like opening and irregular margins, without very diffuse inflammation or marked constitutional disturbance. It heals readily if it is kept clean. Its principal importance lies in the fact that it might easily be mistaken for an ulcerating gumma.

EARLY OPERATION FOR MALIGNANT DISEASE OF THE LARYNX.

In a discussion on the indications for early radical treatment of malignant disease of the larynx[8] Delavan reviews the question of how much can be gained by laryngectomy in suitable cases. The operation must be performed at the earliest possible period to promise the best results. In a suspected case the nature and situation of the growth should be determined as soon as possible. The history of the operation warrants the conclusion that the patient should not be too old, that he should be possessed of good vitality, and should not be suffering from any physical defect likely to complicate recovery; and that he be of a cheerful, courageous temperament. The growth should be located within the larynx and favorably situated for complete removal with the best outlook as to the possibility of non-recurrence. The question of partial or total removal of the larynx cannot as yet be said to be definitely settled.

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[3] Medico-Chirurgical Transactions, vol. lxxviii.

[4] American Laryngological Association, 1895.

[5] Hospitals Tidende, No. 6, 1895.

[6] Section on Laryngology, British Medical Association, 1895.

[7] French Society of Laryngology, May, 1895.

[8] British Medical Journal, October 26, 1895.

Butlin[9] describes the operation of thyrotomy, which he has done twenty-eight times for malignant disease. The dangers of exploratory thyrotomy and of thyrotomy with removal of intrinsic carcinoma are singularly light. An operation is advisable in cases of carcinoma of intrinsic origin if it is of limited extent, especially if the arytenoid region is not involved, and in which the lymphatic glands of the neck are not affected.[10] Great care must be taken in the after-treatment. No dressing is inserted into the interior of the larynx. The head should be kept low and the patient on his side. On the next day water or other fluids are taken into the mouth and an attempt is made to swallow, which is generally successful.

NODES OF THE VOCAL CORD.

As a result of the study of twenty cases, Haring[11] calls attention to the relation between these nodes and relaxation of the cords, due to fatigue. In many cases of voice-strain he has noticed that the free edge of the cords are bent inwards in phonation, so that the convexities present towards each other and touch at a point anterior to the middle of their length; the position in which nodes are commonly found. In almost all cases there is a history of excessive and often faulty use of the voice, occurring most frequently in singers. Of twenty cases, sixteen were females and fifteen between eighteen and twenty-two years of age. The principal symptoms were impairment of the singing voice, and fatigue in speaking. The author believes that in overstrain of the voice the crico-thyroid muscle is the first to suffer, and that in its weakened condition it cannot fully antagonize its opponents, and thus, instead of being kept straight, the edge of the cord is allowed to bulge toward the median line. If there is much use of the cords in such a condition, the mechanical impact would be sufficient to cause a node.[12]

In the discussion of a case presented by Dr. Dundas Grant[13] of hoarseness in which no abnormality was seen except loose vibration of the inner portion of the cords in the lower register, Dr. Wolfenden suggested that this was the condition in which little fibrous nodes are often found in the anterior portion of the cords. These nodes are due to excessive forcing of the voice generally accompanied by a faulty vocal method. Dr. F. I. Knight[14] in a review of this subject calls attention to the imperfect nomenclature of this affection. The treatment demands rest for the voice for a more or less prolonged time. In a few cases the nodes have been excised, but less radical local treatment, the application of astringents and caustics, are generally recommended.

NIGHT AIR.

In his presidential address, Roe[15] protests against the indiscriminate practice of sleeping with windows widely open. The relation of damp air and sudden changes to diseases of the air-passages has long been recognized. A warm humid atmosphere is often beneficial, while a damp air is to be avoided. Cold air must be dry in order to be advisable in diseases of the respiratory tract. A person while asleep is no less susceptible to climatic influence than when awake. Many persons notice in the morning trouble in the air-passages which could be accounted for by too great exposure during the night. The climate of the region of the Great Lakes is a damp one, especially in the spring, and at night. In this region also diseases of the nose, throat and lungs are more prevalent than in other localities. A careful regulation of the atmosphere in which a patient sleeps may remove the cause of persistent trouble.

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Nineteenth Annual Meeting, Windsor Hotel, Montreal, Can., September 17-19, 1895.

PRESIDENT'S ADDRESS.

Dr. S. Sherwell of Brooklyn, welcomed the members and congratulated them on the certain success of the meeting, due to the number of papers and subjects on the programme and the full attendance. He gave a statistical exhibit of the disparity and excess of the alien element, seeking relief for skin affections in hospital and dispensary practice. He had examined and collected several thousand cases which showed a large preponderance of foreign born and children born here of foreign parents (and thus almost as much to be considered aliens as though born abroad). The subject of constitutional treatment in diseases of the skin was then discussed and the views of Pye-Smith, Crocker and Malcolm Morris, as expressed in the last meeting of the British Dermatological Association, were in a great measure substantiated, favoring such internal treatment to be carried out coincidently with local measures.

In making suggestions for the future work of this Association, which must be considered as a sort of Supreme Court for matters dermatological in this country, he thought subjects of high scientific interest should be chosen.

Dr. Fordyce, of New York, related a case of

LUPUS ERYTHEMATOSUS DISSEMINATUS,

in which the lesions were situated upon the hands and arms. The patient was a young women, and during pregnancy the spots disappeared, leaving in their place atrophic scars surrounded by a pigmented zone. In a second case which he had observed the eruption likewise disappeared under the same conditions, but returned in an equally severe form after confinement.

RAYNAUD'S DISEASE OF THE EARS

was described by the same reader in a man of thirty-nine years. There was a suspected syphilis, from the history. The ears had become suddenly cold and blue on a warm day, and had remained so for several hours, gradually resuming the normal color. During six months such attacks were frequent, and the ears finally became permanently bluish-black. A gangrenous patch formed over an area of half an inch in diameter. The process was followed by cicatrization, and the blue color disappeared. The condition was explained on the theory that with syphilis as an etiological factor the arterial coats were implicated, leading to obstruction in the vascular supply, and an element of vascular spasm due to cold or other cause being added, the congestion and gangrene followed.

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[9] Loc. cit.

[10] For the details of this operation see page 1,025 of the British Medical Journal, October 26th.

[11] Manchester Medical Chronicle, February.

[12] Journal of Laryngology, May.

[13] British Laryngological Association, January 11.

[14] Transactions American Laryngological Association, 1894.

[15] American Laryngological Association, 1895.

Dr. Bronson questioned the advisability of including this case under Raynaud's disease, in which the clinical picture is fuller and the disease a more general one. In gangrene about the face he always looked for syphilis. It seemed not improbable that here a neuropathic condition originating in syphilis had been the cause of the trouble.

Dr. White thought the localization did not preclude the idea of its being Raynaud's disease. He had seen a case affecting both the fingers and portions of both ears, but never had seen it affecting the ears alone.

Dr. Sherwell thought a syphilitic history was usually obtainable. At times the ears were disposed to the same changes observed in the fingers. He had found antisyphilitic treatment of benefit, and related one case thus cured.

Dr. Fordyce said, in closing, that the term Raynaud's disease is a general one including endarteritis and other pathological conditions. Raynaud's original monograph did not discuss the pathology.

ANGIOKERATOMA OF THE SCROTUM

was the title of a paper by the same author.

A patient, sixty-six years of age, was described, who showed upon the scrotum a number of dark-purple, spherical tumors, varying in size from a pin's head to several times this size, slightly elevated and covered with a slightly thickened horny layer. There were no subjective symptoms. The lesions seemed to consist of lacunar spaces filled with blood, these occupying the papillary portion of the derma. The reader's investigations lead to the belief that the primary change is vascular. The blood spaces in the rete Malpighii he believes are caused, as Pringle claimed, by a downward growth of the cells of the layer, producing a constriction of the terminal loops and their resulting distension.

Dr. Morrow said he had had two cases clinically identical with this during the year and believes they were pathologically identical as well. He thinks the designation correct.

Dr. White did not think the keratomatous element very marked as shown in the illustrations.

Dr. Zeisler thought it natural that in what we might call a new disease, additional features to those first described, might be subsequently discovered and added. His own cases, which corresponded to the typical ones of Mibelli, differed somewhat from this. He thought a somewhat stronger development of the horny layer should be present to wholly justify the name. Wherever stagnation of the blood exists we have the element which favors the production of keratoma.

Dr. Shepherd said he had often noticed in varicose veins of the scrotum an enormous vascularity of the skin. He believed the condition described by the reader was a varix.

Dr. Fordyce said he did not think the condition could be compared to varix of the veins, but was rather a varicose condition of the papillary capillaries. The essential condition upon which stress is laid by previous observers is the existence of blood spaces in the epidermis. If the keratomatous element is not considered essential, then this case must be considered one of angiokeratoma, in spite of the slight development of the horny layer at some points.

Dr. Graham, of Toronto, then read upon

HYDROA ESTIVALE,

on a rare affection of the exposed parts due to direct or reflected sunlight. Two cases were reported. In one a limited number of small red spots appeared upon the face and hands, and recurred as often as the young girl went out into the daylight. The lesions became vesicular and then pustular, and finally these became black in the centre and showed umbilication. Crusting then took place, and scar tissue resulted. When gloves were worn the hands remained free. In the second case, a blond girl suffered from burning sensations, swelling, and vesicular eruptions whenever exposed for twenty minutes or more to the direct rays of the sun. The other symptoms were coryza, malaise, insomnia and anorexia during the attack. In this case the direct sunlight was not essential, since sitting near an open window produced the same results. The term hydroa vacciniforme does not apply to all cases, and the designation estivale seems the better one. It is not only the ultra-violet rays, the reader thought, which exert an injurious effect upon the skin of some persons, but also the heat rays; but their mode of action in producing so deep an effect as to leave scarring is not readily explained. We have to invoke the influence of the vaso-motor nervous system, and explain it by reflex action. The amount of destruction of tissue by necrosis will depend upon not only the individual vulnerability as regards the tissues, but upon the length of exposure of the parts to the injurious influence. A covering of the part in such a way as to exclude the light was almost always effectual.

Dr. Zeisler had seen such results of the sun's action. He had recently observed a case which recurred after every exposure. A second case had been under observation this summer. He did not see the necessity of calling these cases hydroa, or of classifying them under a new title. He regarded them as a form of erythema multiforme. Atropine was suggested as a drug to try.

Dr. White regarded the condition as a dermatitis, and not as a specific individual affection. The type is not maintained absolutely in successive attacks.

Dr. Bowen had made an histological examination in one case, where the inflammation was formed by necrosis and umbilication and found the necrosis extending to the corium. Erythema multiforme is never followed by a scar. In his case the boy looked as though he had had the small-pox.

Dr. Hartzell spoke of a case occurring in warm weather without exposure to the sun. The only difference between it and the other cases was one of degree, the inflammation not being sufficient to cause necrosis.

Dr. Phillips, of Toronto, who had treated one of the cases reported by Dr. Graham, spoke by invitation. He had employed soothing and protective dressings for the most part. He had thought to exclude the violet ray by a solution of bisulphate of quinine incorporated with a bassorin paste or to annihilate the blue, indigo and violet rays of the spectrum by covering the exposed parts with a thick yellow paste. He hoped these experiments when completed would throw light upon whether the disease really resulted from the effects of the chemical rays.

Dr. Jackson referred to the case of a boy of ten years who had shown this sun rash for six or seven years upon the face and hands, followed by pitting and scars. The patient seems to suffer more in winter, especially on bright days, corresponding to Bowles's cases in Alp-climbers, in whom, too, he uses a brown ointment with success.

Dr. Shepherd had seen the affection in a fellow-traveller in the Alps, and within the past two weeks had seen a girl in Montreal who had suffered for three years. Exposure to the open air was sufficient to cause swelling of the face and bullæ, which would be followed by scarring.

Dr. Allen had also seen such cases. He was very familiar with the appearance of Dr. Jackson's case, having frequently watched the changes in the boy's appearance, though he had never treated him. He believed there were certain rays of light which produced peculiar effects upon the skin and in those predisposed the protective method is the only rational one.

Dr. Sherwell recommended a yellow veil or some similar device, for covering the face, and thus making a virtual developing chamber of the part.

Dr. Graham was pleased to hear of Dr. Bowen's investigations which made the deep-seated necrosis characteristic of the condition and excluded any idea of erythema. Whether the superficial character of the lesions in some cases depends upon the individual or the amount of exposure is uncertain, but he believes it due to the individual. He thought perhaps the term dermatitis solaris would be the best under which to include all cases. It occurs in women later in life than in men, and is very persistent.

Dr. Jackson, of New York, read the next paper, on

BROMIDE ERUPTIONS.

Two cases were reported. In one, which related to a young woman, chicken-pox-like lesions appeared upon the forehead and spread over the body. Crusts formed, especially on the scalp, and under them a raspberry-like growth took place. In the second case the lesions at first looked like impetigo contagiosa, but were followed by the same fungating lesions. Upon the legs these broke-down into indolent, irregular ulcers. The point of interest is the long interim between the cessation of the drug and the appearance of the eruption.

Dr. Hyde referred to the similarity between the colored plate shown by Dr. Jackson and that representing a single lesion, which accompanied Dr. Tilbury Fox's original paper on the subject. He thought this effect of the bromides was seen chiefly in young subjects and cachectic individuals. He never saw it in the healthy. He doubted if this form of lesion is peculiar to bromides. He had seen iodide eruptions present quite the same characters and was prepared to believe that other drugs might act in the same way in subjects with sensitive skin who were in poor health.

Dr. Morrow agreed with Dr. Hyde that the severe forms were liable to be seen in children prone to vascular disorders from slight cause. The continuance of the eruption after the cessation of the drug is opposed to our knowledge of drug effects. As a rule, eruptions have a tendency to disappear almost immediately after the drug is discontinued and the instances in which the eruption continues for several weeks are difficult of explanation.

Dr. White expressed surprise that Dr. Hyde thought the health of the individual had anything to do with the eruption; it was in his opinion the result of individual idiosyncrasy. He had never seen any such eruption as Dr. Jackson described result from other drug than iodides or bromides. He had seen an infant affected by the milk where the mother was taking bromides.

Dr. Hartzell referred to the frequency with which these severe effects were associated with valvular disease of the heart.

Dr. Fox had first thought Dr. Jackson's case one of hereditary syphilis. Some syphilides resemble the bromide eruptions seen in adults. [He presented a photographic slide to illustrate the great similarity.] Mistakes are likely in children known to be syphilitic who have been given the bromides. The drug might evoke the cutaneous syphilis.

Dr. Graham spoke of the confusion arising from wilful, careless or intentional faulty history as to bromides having been administered.

Dr. Allen had seen the bullous form of iodide eruptions assume this fungating appearance and closely simulate that due to bromides. The eruption may persist long after the drug has been stopped. This can scarcely be accounted for by irritation of the skin due to elimination. In his paper last year he had dwelt upon this persistence after minute doses of quinine. He thought the small quantity of other drugs sometimes given forced us to account for the persistence of lesions by reflex nerve influence, and possibly, as he had suggested for quinine, by central nerve change in some cases.

Dr. Sherwell said a few years ago such exaggerated types of lesion would be called yaws or the like. He mentioned cases surely due to the iodide of potassium which were almost identical with those from the bromide. A bromide eruption recently treated, not only persisted, but grew more intense several weeks after the drug was stopped.

Dr. Hyde mentioned hydriodic acid as a drug whose use had been followed by lesions similar to this case, as reported to him by a fellow physician. He had personally no direct knowledge of other drugs than the iodides and bromides being at fault, but believed there might be such.

Dr. Morrow thought the history of cases which persisted was too vague. He saw no reason why a drug eruption should continue to appear.

He would ask Dr. Hyde whether he believed it was due to accumulation of the drug in the system. He had found long-continued administration necessary to produce the nutritional changes in the tissues. Iodine applied externally, on the other hand, may produce an eruption within twenty-four hours. Here we have a purely neurotic phenomenon, and not trophic changes, as are probable in the other case.

Dr. Hyde said drug eruptions quickly subside after the drug is withdrawn, but this particular form differed and should be placed by itself. There is usually some underlying disease for which the bromide is prescribed.

DR. JACKSON, in closing, said that since writing his paper he had seen a young woman who presented bromide lesions weeks after the drug was stopped. This was usually not due so much to the appearance of new as to the persistence of old lesions.

(To be continued.)

Recent Literature.

Modern Materia Medica. With Therapeutic Notes for the Use of Practitioners and Students of Medicine. By DR. OTTO ROTH. Seventh edition, revised by DR. GREGOR SCHMITT. New York: William Wood & Co. 1895.

This volume is a translation of the seventh edition of this work a translation of an earlier edition appearing some years ago. Nearly three-quarters of the book is devoted to materia medica, and many of the recent drugs described are not mentioned in the last edition of the U. S. Pharmacopœia; but, on the other hand, some of the remedies given in our pharmacopœial list are omitted. The therapeutic notes form a separate portion of the work, and although not complete, offer many suggestions of value. The book is among the good ones of the kind, but not of the highest rank. The publishers have spared no pains to make the volume serviceable and attractive.

A German-English Medical Thesaurus, or Treasure of Single and Compound Medical Words and Terms. With Dialogues, Idiomatic Phrases and Proverbs, etc., and German and English Indexes for Physicians and Medical Students. By REV. HENRY LOSCH, M.D., author of "Improved Method and Complete Manual for the Systematic and Practical Study of the German Language," etc. Philadelphia: Published by the Author. 1895.

This dictionary, which in general gives excellent English definitions of German medical terms, possesses the fault of a most peculiar arrangement, the advantages of which are perhaps evident to the author but difficult for the general reader to fathom. The arrangement of the terms according to a peculiar system in which the various parts and conditions of man are taken up in an arbitrary order, makes it impossible to find any given term without looking it up in the index at the back of the book. If the terms had been arranged in alphabetical order, as in all other dictionaries of which we have cognizance, this difficulty which detracts immensely from the value of the book would have been obviated. The German and English Indexes contain 20,000 words.

Lindsay and Blakiston's Physician's Visiting-List for 1896. Philadelphia: P. Blakiston, Son & Co.

This well-known visiting-list presents several improvements in the new edition for 1896, and the reading matter and memoranda pages have been re-arranged and simplified. The lists for 75 patients and 100 patients will also have special memoranda pages and hereafter will come in two volumes only, dated January to June, and July to December.

The tables of doses, and directions for emergencies in the beginning of the book are carefully made up, and contain a great deal of valuable information in an extremely compact form.

The book is excellently adapted to its purpose.

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THE PRESENT STATUS OF SEROTHERAPY.

AT the Sixth Congress of the Italian Society of Internal Medicine held at Rome, October 22d to 25th, the present status of serotherapy was discussed by Pio-Foà of Turin, Maragliano of Genoa, Petrone and Fazzo of Naples, Campana of Rome, and other eminent bacteriologists and clinicians.

Maragliano claims to have experimentally obtained an antitoxic serum which possesses curative efficacy in tuberculosis, and which is giving good results in his own practice and in that of several of his *confrères;* the mode of preparation of this serum will eventually be published, though he is unwilling to make it known at present, though derived, as he says, "from animals vaccinated with all of the toxins contained in the virulent cultures, both those that resist and those that do not resist heat." Campana, of Rome, affirms his belief that Maragliano's serum is nothing but Koch's tuberculin, improved. As a dermatologist, he declares that this lymph in tuberculous affections of the skin favors the resorption of morbid infiltrations, but does not cure the tuberculous processes, and the same affirmation applies to tuberculosis of internal organs.

Fasano, of Naples, reported a case of pulmonary phthisis which seemed to have markedly improved under the use of this serum. Marrani, of Rome, has treated with benefit twelve cases of tuberculous broncho pneumonia with Maragliano's serum. The results were, disappearance of the fever, of the râles, of the cough, of the dulness, a gain in spirits and in appetite, and increase of weight. Ascenzi, of Rome, and Argento, of Palermo, communicated — the first three, the second five — cases of tuberculosis treated with success by Maragliano's serum.

With regard to the serum treatment of diphtheria, Mya, of Florence, stated that he had treated 112 cases of diphtheria at the clinic of children's diseases with Behring's antitoxin; the results were 22 deaths and 90 recoveries. In a first series of 51 cases, he had to do with diphtheria of the pharynx and larynx; there were 15 deaths, giving a proportion of 29.4 per cent. (under the old treatment he used to have in these cases a mortality of 50 per cent.). A second series of cases comprehends 43 cases of simple diphtheria of the pharynx, with 7 deaths and 36 recoveries. In a third and last series, there were 18 cases of pharyngeal diphtheria with beginning of extension to the larynx; all these recovered rapidly. In all these cases the diagnosis was controlled by the bacteriological examination.

Mya is in the habit of injecting daily during the first three days of the sickness ten cubic centimetres of serum. In fatal cases he has often observed want of success to coincide with a notable degree of hypertrophy of the glands; the autopsy has disclosed along with grave alterations of the lymphatic system, fatty degeneration of the viscera. He is persuaded that if one would have recourse with success to serotherapy in diphtheritic cases, there must be relative integrity of the lymphatic system. Another group of cases in which serotherapy proves inefficacious includes those forms of diphtheria in which the exudate invades very rapidly the whole respiratory tract, that is, not only the larynx and trachea, but also the bronchial tubes. It is principally in the coldest months of the year that he has observed cases of this kind.

Maragliano, in summing up the diseases in which serotherapy has been employed with more or less of success, remarks that in streptococcus infection (notably in erysipelas and puerperal septicemia) the serum treatment has already produced sufficiently encouraging results to warrant further trials.[1]

No success has followed attempts to similarly treat typhoid fever and cholera, that is, by the usage of a serum obtained from patients recovered from the disease, or from immunized animals.

In tetanus, the results obtained with serums obtained from animals immunized by attenuated toxins have not been remarkable. In 30 cases so treated, there have been 13 recoveries.[2]

Maragliano sums up the statistics of serotherapy in diphtheria by citing Heubner's figures: in 3,036 cases there was a mortality of 20.6 per cent; this is contrasted with a mortality of 38.8 per cent. before the usage of antitoxin. He thinks that "the enthusiasm aroused by the discovery of Behring has been justified by the splendid results obtained in practice."

With regard to the serum treatment of pneumonia, there is little to add to the results obtained some time ago by the two Klemperers, and by Fowlisky and Emmerich; the Klemperers, in particular, claiming remarkable clinical success in several cases with their "antipneumotoxic serum." Pio-Foà, who was referee at the meeting of the Congress aforesaid, has been making numerous experiments on animals with a serum of his own preparation, which he calls an "antipneumococcic vaccine." He first tried glycerine extracts of infected blood, the glycerized extracts of the bodies of bacteria remaining on the filter, the precipitates obtained with sulphate of ammonia, etc. After having found out the complete inefficaciousness of the chemical vaccinations, with the exception of the filtrate of the *meningococcus*, he tried to obtain a vaccine prepared according to Pasteur's methods (attenuated by heat, by oxygen, by light, etc.). He finally obtained the desired attenuation by means of Lugol's solution, and by employing the method of intravenous injection, he now succeeds in vaccinating hares against the different varieties of diplococcus lanceolatus, so as to cause them to support with impunity 160 cubic centimetres of a culture sufficiently virulent to kill the test animals in a few hours, the duration of the immunity seems to be quite long, that is, three months at least.

The experiments which Pio-Foà related, where hares, dogs, sheep and goats are rendered refractory to the pneumococcus infection were of great interest and warrant hope that the serum treatment may yet be found to be of unequivocal benefit in the pneumococcus diseases of man. Foà found that when both the diplococcus and the serum were injected at the same time, the animal survived, and when the serum was injected five hours after the infection, the symptoms were light and the animal soon recovered; which indicates that the serum also exercises a curative action.

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RESUSCITATION AFTER SUBMERSION.

IN answer to the inquiry of our correspondent, Dr. H. Hunt, whose letter we publish on page 555 of this issue of the JOURNAL, with regard to the length of time after which it is possible to hope for success in efforts at resuscitation after drowning accidents, we would say that a hasty review of the literature of the subject shows that cases of recovery are rare after submersion of three to five minutes. Cases have been reported of successful resuscitation after ten to fifteen minutes, but the circumstances attending such accidents are generally such as to preclude the possibility of an accurate record of the time of submersion being made. The time must be roughly estimated by computing the number of minutes which must have been required for the rescuers to get to the patient, raise him from the water, and transport him to the place where efforts at resuscitation can be begun.

In a number of cases in which the patient is believed to have been submerged for ten to fifteen minutes there has been found evidence that he was in a state of syncope or concussion from a blow on the head, chest or abdomen, so that active respiratory movements did not take place while he was under water.

In this connection, we may cite the case reported by Pope[1] in which the patient was knocked on the head, and expansion of the chest was prevented while under water by weights which lay upon him. This patient is believed to have been resuscitated after being under water from twelve to fifteen minutes.

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[1] See this Journal, cxxxii, p. 441.

[2] See also this Journal, vol. cxxxii, p. 287.

[1] Lancet, London, 1881, ii, 606.

Dr. J. Mason Warren[2] reports the case of a young woman whom he was successful in resuscitating in which ten minutes are believed to have elapsed before she was gotten out of the water, and twenty minutes before artificial respiration, etc., was begun. The young girl was a passenger on a train which plunged off the bridge into the river at South Norwalk, Conn. After the accident sufficient time elapsed for a boat to put out to the middle of the river, a hole to be cut with axes in the side of the car, and the mother of the young woman, whose head was not under water, to be pulled out, before she was reached. In this case, although it is extremely probable that ten minutes were required before the patient was taken out, it is possible that she may have been stunned by striking her head against the side of the car or a seat as the car went down, or may have fainted from the alarm of the accident. It is also possible that the water which poured into the car did not reach the level of her head until just before the rescuers reached her.

The case reported by Burrall[3] shows the methods to which it is necessary to resort in estimating the probable time of submersion. In this case, which occurred at one of the seaports on the Maine coast, a man was seen to sink, by two men who were at a distance of 250 paces from the shore. They ran to the shore, spent a moment in deciding not to swim for him, one of them pulled off his boots and trousers and waded a short distance out to a row-boat, which he brought to shore, and then took the other man in. He rowed him out to a yacht which was anchored 240 yards from shore, unlocked the cabin door, which was padlocked, secured a boat-hook, and rowed to the spot where the man was seen to sink. He was seen lying on the bottom in nine feet of water, and fished out with the aid of the boat-hook. His head and shoulders were dragged into the boat, and with the legs hanging over the stern he was rowed rapidly to shore, and rolled over a few times before Dr. Burrall, who had been sent for in the meantime, reached him and began artificial respiration. It would seem as if fully ten or twelve minutes must have elapsed before the active work of resuscitation was begun. Dr. Burrall was not able to record the exact length of time after the artificial respiration was begun until the first voluntary respiratory movement took place. It was necessary, however, to keep up artificial respiration for three-quarters of an hour.

Such cases as the above are, however, the rare exceptions, and the statement made in Wharton and Stillé's "Medical Jurisprudence" that a submersion of three to five minutes generally places the patient beyond hope of revival, is probably correct.

According to Harley,[4] dogs kept under water one and a half minutes always died, if water had entered the lungs. If the entrance of air had been prevented by plugging the trachea, they survived a submersion of four minutes.

With regard to the time during which artificial respiration should be kept up, the rule generally laid down in emergency lectures on the subject is that if no flutter of respiration has appeared after an hour's work, and no heart beats can be heard, further efforts are useless.

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MEDICAL NOTES.

An Exploring Trip under the Direction of two Medical Men.—Dr. William H. Furness, 3d, and Dr. H. M. Hiller, both members of the class of 1891 of the Medical Department of the University of Pennsylvania, have started for the South Sea Islands, where they will spend at least a year in collecting ethnological and archeological specimens for the University. Should the field prove fruitful, it is probable that their stay may be prolonged to two years. After arriving at San Francisco they will sail for Yokohama, touching at Honolulu. They will proceed to Singapore, and from there will take passage for the Philippine Islands, visiting other groups of the East Indian and South Pacific Archipelagoes in a chartered vessel.

An Underground City.—There is said to be a community of one thousand people, all miners, men, women and children who live in the bottom of one of the rock-salt mines at Wieliczka in Galicia at a depth of several hundred centimetres. The galleries of the mines extend underground to the length of 82 kilometres, and the miners have there their houses, a town-hall, club-rooms and even a theatre. Their entire life is spent in these underground streets and squares, which are lighted by electricity. Families are to be found there, the members of which have not mounted to the earth's surface for several generations (?). The little church of Wieliczka, with its statues sculptured of rock salt, is one of the most wonderful structures, architectually, in Europe. The inhabitants are happy and long-lived, preserved as it were in salt. The continuous labor at mining salt does not seem to undermine their constitutions, a fact which is a remarkable testimony to the preserative powers of salt, and the romancing ability of the author of the story about generations never having seen the sunlight.

The Migration of the Flea. — E. W. Forster in a letter published in the *British Medical Journal* of October 26th, relates an experience illustrative of the methods by which the Madagascar chigoe, or jigger, invaded East Africa, a region which was not at the time of this experience (1875) a chigoe-infected district. He writes: "Whilst sauntering in the early morn along a native track about eighteen miles inland, my attention was attracted by a curious agitation across the pathway, as if a stream of living dust was being driven out of the dry and dusty jungle. A nearer approach and examination proved the phenomenon to be a migratory movement of fleas. The column of these *aphaniptera* was about two feet in breadth, and consisted of an innumerable host rapidly traversing both the ground and air by characteristic leaps and bounds. I watched the onward and regular procession of this mighty swarm for a quarter of an hour, and left the formidable multitude undiminished in numbers, and apparently under orders for a neighboring village."

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[2] Surgical Observations, Boston, 1867, 598–600.
[3] Medical Record, 1891, xl, 208.
[4] Potter's Materia Medica, Pharmacy and Therapeutics, 881.

The First Operation under Ether in England.—In an excellent editorial on Sir Edwin Arnold's address to the students at St. Thomas's Hospital, the *Lancet* calls attention to the fact that the advance of our art which most appeals to him is the discovery of anesthetics. The spirit in which the discovery was welcomed in England is well illustrated by the account given by Sir Russell Reynolds at University College Hospital dinner in 1888, of the first operation performed in England under anesthesia: "The first operation in this country performed under an anesthetic was witnessed in University College Hospital. Liston had consented to try the anesthetic. I can see him now as he said to the students, 'Gentlemen, we are going to try a Yankee dodge for making men insensible.' . . . At length Peter Squire said, 'He is quite ready now, sir.' Liston's knife flashed in the air; I took out my watch to count the time, and the leg was on the floor in six-and-twenty seconds. Liston turned to the students and said, 'This Yankee dodge, gentlemen, beats mesmerism hollow.'" And the *Lancet* remarks: "That was all the welcome given to the first use of anesthetics in England. There was no public rejoicing, no Thanksgiving Day, no Te Deum in the churches, no commemoration of the discoverers; the great discovery had to make its way against obstinate prejudice and folly in high places, even in some of our profession; and Liston's somewhat grudging utterance should serve as a warning to those of us who make light of new methods only because they are new. We are glad that Sir Edwin Arnold saw only the discovery itself, and not the way in which it was received."

NEW YORK.

Fortieth Anniversary of the Woman's Hospital.— At the fortieth anniversary of the Woman's Hospital, held November 21st, Dr. Wm. T. Lusk and James C. Carter were among the speakers. During the year 927 patients were treated in the hospital, and 4,704 in the outdoor department. There were 48 deaths in the institution. The receipts from all sources amounted to $50,340, and the expenditures to $73,889.

A Twenty-Four Pound Baby.— John J. Mackey, a porter employed at the Edison Building on Broad Street, is the proud father of a girl baby which weighed twenty-four and a half pounds at its birth on the night of November 17th. As John is a small man and his wife of only average proportions, the extraordinary size of their offspring is quite surprising.

Medical Reports of the Presbyterian Hospital. — The twenty-seventh anniversary of the Presbyterian Hospital was celebrated with appropriate exercises on November 16th. The medical reports showed that during the year 2,624 patients were treated. In addition, 2,067 were cared for in the emergency ward, and 1,550 ambulance calls were answered. In the dispensary 13,044 new patients were treated. The expenses of the hospital during the year were $165,692. The following receipts were reported: From pay patients, $20,534; income from investments, $27,851; donations, $12,000. There was thus a deficit of $90,625 for the year.

A New Water-Supply for Brooklyn. — The Brooklyn City authorities are negotiating for the purchase of the plant of the New Utrecht Water Company, which is located at Sheepshead Bay and obtains a water-supply by means of twenty-seven driven wells. The water is said to be wholesome and almost pure, and the company has been supplying the old town of New Utrecht, which is now the Thirtieth Ward of Brooklyn. The plant has a capacity of eight million gallons per day.

Typhoid Fever in Milk.— In Watertown, N. Y., where there has been a severe outbreak of typhoid fever, and where 50 per cent. of the cases were found to be in families supplied with milk by a single dairyman, a bacterial investigation made by the Board of Health of the milk supplied by the various dealers of the city has shown that in the milk of five vendors there were typhoid-fever germs, and in that of five others, tubercle bacilli, while in three other instances the milk was otherwise impure.

The Low Death-Rate Continues. — Curiously enough, the number of deaths reported during the week ending November 23d was precisely the same as in the preceding week, 676. The average for the corresponding weeks of the past five years was 731. The mortality from both pneumonia and diphtheria shows a further decline.

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Miscellany.

AN EARLY EXPRESSION OF THE NEED FOR REVISING THE RULES OF FOOTBALL.

The following extracts from old English law reports show how slow has been the evolution of the naughty game of football to its present gentle estate:

Middlesex Sessions Rolls. Vol. I. 20 March, 18 Elizabeth.

True bill that seven of Woxbridge aforesaid, with unknown malefactors to the number of a hundred, assembled themselves unlawfully and played a certain unlawful game, called footeball, by reason of which unlawful game there rose amongst them a great affray, likely to result in homicides and serious accidents.

G. S. P. R. Easter, 18 Eliz.

5 March, 25 Elizabeth.

Coroner's Inquisition, post-mortem, taken at Southemyms Co. Midd. on view of the body of Roger

Ludforde yoman, there lying dead. With verdict of jurors that Nicholas Martyn and Richard Turvey, both late of Southmyms yomen were, on the 3d instant, between 3 and 4 p. m., playing with other persons at foote-ball in the field called Evanes Field at Southmyms, when the said Roger Ludforde and a certain Simon Maltus of the said parish yoman, came to the ground, and that Roger Ludforde cried out "Cast hym over the hedge," indicating that he meant Nich. Martyn, who retorted "Come thowe and do yt"; that thereupon Roger Ludforde ran towards the ball with the intention of kicking it, whereupon seeing his purpose Nicholas Martyn "cum cubito dextri brachii sui" and Richard Turvey "cum cubito sinistri brachii sui" struck John Ludford on the forepart of his body under the breast, giving him a mortal blow and concussion, of which he died within a quarter of an hour; and that Nicholas and Richard in this manner feloniously slew the said John.

G. D. R. 15 April, 25 Elizabeth.

Middlesex County Records Sessions' Rolls, Vol. II, p. 81. 5 July, 10 James I.

True Bill that, at St. Andrew's in Holborn Co. Midd. on the said Sabbath Day, James Wilson late of said parish gentleman gathered to himself very many unknown persons in a certain place called Eely Field, and did play with them a certain unlawful game called footeball. G. D. R. 13 Aug. 10 James I.

13 January, 12 James I. Order touching Foot-Ball.

Whereas greate disorders and tumults doe often arise and happen within the streetes and lanes neere adjoyninge to ye Cittye of London by playinge at the foote-ball: It is now ordered that henceforthe all constables 'doe from tyme to tyme represse and restrayne all manner of Foote-ball-playe in the lanes and streetes adjoyninge to the cittye of London. S. P. Reg.

Correspondence.

THE STUDY OF DERMATOLOGY IN EUROPE.

(Continued from No. 21, p. 531.)

PRAGUE.

THE general hospital of Prague is an old building, which, like so many of its kind in Europe, originally served as a convent. Professor Pick received me most cordially and hospitably, and introduced me to his assistants. Every kindness was shown me, and I found that I had an embarrassment of opportunities before me.

Every morning at half-past six, Professor Pick gives his lectures on skin and venereal diseases. At nine o'clock there is the out-patient clinic ("ambulatorium") held by Dr. Waelsch, one of Pick's first assistants. At nine o'clock there is also the visit in the wards by Pick himself, and lastly there are the dermatological operations. But now I must speak of Prague more in detail, for in my opinion it is one of the few cities in Europe, where one can study dermatology to advantage in all its branches.

The out-patient service is a very large one, and from five to seven thousand new cases are seen yearly, while the constant returning of old ones increases this large clinic enormously. As a rule, Dr. Waelsch sees all the cases save those which he considers of great interest or difficulty, and these patients are requested to wait for Pick, who looks in from time to time during the morning. The cases are often extremely instructive and interesting — in truth I know of but one out-patient clinic in Europe which can surpass this Bohemian one of Professor Pick, and that is, of course, the St. Louis in Paris. The American often loses a great deal by not understanding the Bohemian language, for almost one-half of the patients are ignorant of German. The official language of the hospital is, however, German, and all the physicians and assistants prefer to speak it. To my mind there is one thing which detracts from the interest of the clinic at Prague, namely, the monotonous series of cases of gonorrhea, which follow one after another and delay the true dermatological and syphilitic patients. The daily attendance is about forty-five and they are soon cared for by the large corps of dressers. In Prague the patient's lesions are often dressed before he leaves the hospital, and I am sure that this is a great factor in the rapid cures which I saw there. I refer chiefly to the cases of old eczemas which disappeared almost miraculously under Professor Pick's plaster of five per cent. or ten per cent. salicylated soap plaster.

The most striking feature of this clinic is the important rôle which surgery plays. Sunday is the principal operating-day, but on almost any morning the visitor can find Professor Pick, knife or curette in hand, obliterating all traces of lupus from a patient's face or cutting away an epithelioma. As to lupus, of course the cure by the knife is very rapid, but a large scar remains, and several times I saw nodules starting up again in an old cicatrix of a lupus treated by this radical method. Scarification is seldom employed here over large areas, owing to the fear of a subsequent generalized miliary tuberculosis. Naturally, it was a great advantage to have seen these surgical treatments; but where ether and several assistants are employed, it seems as though dermatology were trespassing upon the domain of surgery.

The wards in Prague are divided into four parts — the men's dermatological and venereal, and the women's dermatological and venereal. The divisions are all extremely instructive on account of the large number of beds, and also because the student can see so many rare diseases so closely associated. I think the diseases of the house-patients there are more unusual than those in Vienna even, and surely that is saying a great deal in praise of Prague. Professor Pick visits the men and women on alternate days. He goes to the bed-ridden, whereas those who are able to walk come before him. My sensations at the first visit with him are still very vivid. Save in Paris, I have nowhere seen so many rare diseases assembled in one hospital. The women's venereal ward is unsurpassed in the world, so far as I have seen it. One might say almost that cases were gathered there by the hundred of hard and soft chancres, gonorrhea and adenitis of all locations. Certainly I have never seen such an array of feminine ulcers as mounted the examining table in Prague that morning. Another feature of the Prague clinic is the horrible extent of lupus and scrofuloderma. Of the former I have never seen so large a proportion in any city, and of the latter I have never seen such deep-seated, dreadful ravages. Some of the children were absolutely riddled by the tubercular foci.

Toward the end of my visit I went to see Professor Pick in his private room at the hospital. He showed me some beautifully mounted bacteriological preparations, many pieces of abnormal skin in alcohol, and some new fixed cultures of ring-worm, and then told me of the advantages offered by the bacteriological and chemical laboratories of Prague, and finally pointed to an empty place with a microscope before it. "There," said he, "is your place; come and work here for two years; I am sure you will want for nothing." Professor Pick told me that he liked to have strangers come to him, and that he gave them a place in his laboratory, which they could keep so long as he considered them an advantage to his clinic. I only regret that I had not known of such an opportunity. I felt then as I do now — if only I could have given my last three months of Vienna to Prague and Breslau. I can't do better than to advise everybody who is interested in skin diseases to spend some time in Prague, for there he will find lectures, clinics, visits, operations and microscopic work all at their best, and under the direction of a professor and his assistants who are among the best in Europe and are extremely hospitable to the stranger.

(*To be continued.*)

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RESUSCITATION AFTER SUBMERSION.

Greenville, Moosehead Lake, Me.,
November 9, 1895.

Mr. Editor: — It occurred to me on reading "The Signs of Death" in the Journal just received that a similar article on drowning might be useful. I wish you would give us something on it, for instance, how long a person can remain wholly and continuously submerged and afterwards be resuscitated, what the signs of death are, etc.

Of course, physicians know about it; only there is as widespread a popular superstition in regard to the time a person can be submerged in the water and then revived, as there is about being buried alive.

I have to make efforts to revive drowned persons whom I know are dead, simply on account of the false ideas on the subject. I have stood on a wharf while they grappled for a body fully ten minutes; and when the body was brought up I went to work — artificial respiration, etc. — though I knew the person was dead. I know a young physician who was censured for not making efforts to revive a child that had been under the water an hour.

We are told of persons being resuscitated who have been submerged twenty-five minutes, an hour, and so on; and perhaps an article by you might give some fellow, who wasn't acquainted with the popular idea and didn't try to revive a dead person, something to tie to.

Is it possible for a person who has been *under* water twenty-five minutes to be revived? Are there experiments on animals showing length of time they live under water?

If you will give me any information besides any article you may give us in the Journal, I will be under obligation to you. Very truly yours,

H. Hunt, M.D.

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PAMPHLETS RELATING TO THE MASSACHUSETTS MEDICAL SOCIETY WANTED.

Boston, November 26, 1895.

Mr. Editor: — If any of your readers will assist me in completing a collection of pamphlets relating to the Massachusetts Medical Society, I shall be greatly obliged. I need the following:

Acts, By-Laws and Orders, printed in 1816.

Acts of the Legislature, etc., 92 pages, printed in Boston, 1822.

Acts, By-Laws and Orders, Boston, 1837, printed by J. Putnam.

Catalogue, 12 pages, without place or date, but probably 1816.

Amendments to the By-Laws and a Correct List of Fellows, June, 1837, 32 pages, 8°, Boston, J. Putnam.

Very truly, Edward J. Forster, M.D.,
51 Massachusetts Avenue.

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NEW CATALOGUE OF MASSACHUSETTS MEDICAL SOCIETY.

Boston, November 21, 1895.

Mr. Editor: The next catalogue of the Officers and Fellows of this Society will be issued early in 1896, and will contain the names of the honorary, active and retired Fellows borne on the rolls on the first day of January next.

Any Fellow who has changed his residence during the past year and any Fellow whose name is incorrectly given in the last catalogue will confer a favor by at once notifying the Treasurer, Edward Jacob Forster, M.D.

METEOROLOGICAL RECORD,

For the week ending November 16th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A. M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	We'th'r. * 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S..10	29.95	44	50	38	94	87	90	W.	N.	10	16	C.	O.	.05
M..11	30.34	38	41	34	85	82	84	N.W.	N.	9	5	C.	C.	—
T. 12	30.39	33	40	26	91	81	86	N.W.	N.	5	5	C.	C.	—
W..13	30.44	38	43	33	86	76	81	N.	N.E.	12	20	C.	O.	—
T..14	30.36	45	48	42	94	86	90	E.	E.	19	15	C.	R.	.03
F..15	29.85	48	51	46	100	93	96	N.E.	W.	13	16	R.	C.	1.41
S..16	30.04	46	51	41	90	64	77	W.	S.W.	9	9	C.	C.	—
☞														1.49

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week

RECORD OF MORTALITY

For the Week ending Saturday, November 16, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,892,332	676	243	13.95	20.70	3.03	.75	5.25
Chicago . . .	1,678,967	416	154	20.40	13.44	4.60	3.12	12.24
Philadelphia .	1,164,000	390	109	12.74	14.04	1.30	1.30	8.32
Brooklyn . .	1,100,000	385	125	15.48	17.92	1.96	1.40	8.68
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	491,205	191	55	14.56	15.60	1.56	1.56	8.32
Baltimore . .	496,315	168	57	12.00	8.40	2.40	1.20	4.80
Cincinnati . .	336,000	94	32	7.42	12.72	—	—	6.36
Cleveland . .	314,537	—	—	—	—	—	—	—
Washington .	275,500	99	35	15.15	15.15	5.05	7.07	2.02
Pittsburg . .	238,617	78	34	24.70	14.30	3.90	3.90	10.40
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	27	3	18.50	3.70	7.40	7.40	—
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	24	3	8.32	4.16	—	—	4.16
Fall River . .	88,020	22	10	31.85	13.65	13.65	4.55	9.10
Lowell . . .	84,359	26	9	11.55	23.10	3.85	3.85	3.85
Cambridge . .	81,519	24	7	20.80	20.80	—	4.16	16.66
Lynn	62,355	19	2	10.54	10.54	—	—	10.54
New Bedford .	55,254	18	8	5.55	16.66	—	—	5.55
Springfield . .	51,534	8	1	—	12.50	—	—	—
Lawrence . .	52,153	19	5	10.52	10.52	—	—	10.52
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	17	2	—	11.76	—	—	—
Brockton . .	33,157	5	1	—	20.00	—	—	—
Haverhill . .	30,185	6	3	16.66	—	—	—	—
Malden . . .	29,706	9	3	22.22	—	—	11.11	—
Chelsea . . .	31,295	12	—	8.25	—	—	—	8.25
Fitchburg . .	26,394	5	1	—	40.00	—	—	—
Newton . . .	27,622	10	4	—	—	—	—	—
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	7	1	—	—	—	—	—
Waltham . .	20,877	10	—	20.00	10.00	—	20.00	—
Quincy . . .	20,712	9	3	44.44	—	—	—	33.33
Pittsfield . .	20,447	6	1	—	—	—	—	—
Everett . . .	18,578	6	2	—	33.33	—	—	—
Northampton .	16,738	3	1	33.33	—	—	—	—
Newburyport .	14,554	1	0	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,894; under five years of age 916; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 409, acute lung diseases 436, consumption 321, diphtheria and croup 219, diarrheal diseases 70, typhoid fever 56, measles 20, scarlet fever 17, whooping-cough 15, cerebro-spinal meningitis 14, malarial fever 11, erysipelas 7.

From measles New York 10, Baltimore 3, Philadelphia, Pittsburgh and Providence 2 each, Brooklyn 1. From scarlet fever New York 7, Brooklyn 4, Pittsburgh 2, Philadelphia, Boston, Haverhill and Malden 1 each. From whooping-cough New York 6, Brooklyn 4, Philadelphia, Cincinnati, Pittsburgh, Providence and Northampton 1 each. From cerebro-spinal meningitis Chicago 5, New York and Washington 2 each, Baltimore, Boston, Worcester, Quincy and Brookline 1 each. From malarial fever New

York and Brooklyn 3 each, Baltimore 2, Philadelphia, Washington and Nashville 1 each. From erysipelas New York 3, Philadelphia 2, Chicago and Brooklyn 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530, for the week ending November 9th, the death-rate was 22.1. Deaths reported 4,492; acute diseases of the respiratory organs (London) 447, measles 187, diphtheria 100, fever 90, whooping-cough 68, scarlet fever 54, small-pox (London and West Ham 1 each) 2.

The death-rates ranged from 13.2 in Croydon to 37.6 in Liverpool; Birmingham 21.1, Bradford 23.5, Cardiff 20.8, Gateshead 17.9, Hull 18.8, Leeds 20.7, Leicester 15.9, London 21.2, Manchester 25.7, Newcastle-on-Tyne 21.2, Nottingham 16.6, Portsmouth 17.0, Sheffield 25.1, Sunderland 20.4, West Ham 17.1, Wolverhampton 33.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 16, 1895, TO NOVEMBER 22, 1895.

Leave of absence for four months, to take effect about December 10, 1895, is granted Captain George McCreery, assistant surgeon.

The leave of absence granted Major Joseph K. Corson, surgeon, is extended twenty days on surgeon's certificate of disability.

First-Lieut. Irving Wallace Rand, assistant surgeon, will report in person without delay to the president of the Army Medical School for the course of instruction prescribed in General Orders No. 78, September 22, 1893, from adjutant general's office.

APPOINTMENTS.

To be assistant surgeons with the rank of First-Lieutenants, November 6, 1895: Thomas Jellis Kirkpatrick, Jr., John Hamilton Stone, Irving Wallace Rand.

Powell Conrad Fauntleroy, to be assistant surgeon with rank of First-Lieut., November 15, 1895.

PROMOTIONS.

Major Justus M. Brown, surgeon, to be deputy surgeon-general with the rank of Lieutenant-Colonel, November 15, 1895.

Captain Daniel M. Appel, assistant surgeon, to be surgeon with the rank of Major, November 15, 1895.

RETIREMENT.

Lieut.-Col. Joseph R. Gibson, deputy surgeon general, retired from active service November 15, 1895, on account of disability incident to the service.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 23, 1895.

P. S. Wales, medical director, ordered to duty as member of the Retiring Board, Washington, November 25th, in addition to his present duties.

R. P. Crandall, passed assistant surgeon, detached from the naval laboratory and ordered to the naval hospital, New York.

Philip Leach, passed assistant surgeon, detached from the naval hospital and ordered to the naval laboratory, New York.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING NOVEMBER 15, 1895.

Fessenden, C. S. D., surgeon. Ordered to proceed from Salem to Boston, Mass., for physical examination. November 14, 1895.

Carmichael, D. A., passed assistant surgeon. Relieved from duty at St. Louis, Mo., and directed to proceed to Vineyard Haven, Mass., and assume command of service. November 1, 1895.

Brooks, S. D., passed assistant surgeon. Relieved from duty at Chicago, Ill., and directed to proceed to St. Louis, Mo., and assume command of service. November 5, 1895.

White, J. H., passed assistant surgeon. Granted leave of absence for twenty-three days. November 5, 1895.

Perry, T. B., passed assistant surgeon. Granted leave of absence for thirty days. November 11, 1895.

Cobb, J. O., passed assistant surgeon. To proceed from Port Townsend to Port Angeles, Wash., as quarantine inspector. November 1, 1895.

Stoner, J. B., passed assistant surgeon. To proceed from Detroit, Mich., to Baltimore, Md., for temporary duty. November 1, 1895.

Gardner, C. H., assistant surgeon. To proceed from San Francisco, Cal., to Chicago, Ill., for duty. November 5, 1895.

Norman, Seaton, assistant surgeon. To proceed from Baltimore, Md., to New Orleans, La., for duty. November 1, 1895.

Thomas, A. R., assistant surgeon. To assume temporary command of service at St. Louis, Mo. November 1, 1895.

Greene, J. B., assistant surgeon. To proceed from Vineyard Haven, Mass., to Baltimore, Md., for duty. November 1, 1895.

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, December 2d, at 8 o'clock.

Dr. H. B. Howard, of Tewksbury, will make a report, by invitation, on "The State Almshouse during Twelve Years of Medical Superintendence." Dr. C. J. Fisher, of New York, is expected to take part in the discussion.

Dr. J. H. Nichols will report, by invitation, "Four Cases of Small-pox at the State Almshouse in the Spring of 1894."

James G. Mumford, M.D., *Secretary*.

The Suffolk District Medical Society, Surgical Section. – The regular monthly meeting of the Surgical Section of the Suffolk District Medical Society will be held at 19 Boylston Place, at 8 o'clock, Wednesday evening, December 4, 1895.

Dr. S. J. Mixter: "Tumors of the Parotid."

Dr. G. H. Monks: "Plastic Operation for New Nose." Exhibition of patient.

Dr. Paul Thorndike: A Case of Deep Urethral Stricture in a Syphilitic Patient."

Dr. F. B. Lund: "Local Anesthesia."

M. H. Richardson, M.D., *Chairman*.
Charles L. Scudder, M.D., *Secretary*.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on December 5th, at 8 p. m., by Asst. Prof. Franklin Dexter. Subject: "A Glance at the Structural Plan of the Brain." The profession are invited.

BOOKS AND PAMPHLETS RECEIVED.

Hyperthermy in a Man up to 148° F. (64.4° C.). By A. Jacobi, M.D. Reprint. 1895.

Bromoform in Pertussis. By P. J. Eaton, A.M., M.D. (Harv.), Pittsburgh, Pa. Reprint. 1895.

Surgical Treatment of Laryngeal Tuberculosis. By J. W. Gleitsmann, M.D. Reprint. 1895.

Three Cases of Enucleation of the Eye, with Remarks. By Leartus Connor, A.B., M.D. Reprint. 1891.

Appendix to Dunglison's Medical Dictionary. Twenty-first edition. Philadelphia: Lea Brothers & Co. 1895.

Hypnotism, How it is Done, Its Uses and Dangers. By James R. Cocke, M.D. Boston: Arena Publishing Co. 1894.

Is Hydrochloric Acid Secreted by the Mucous Membrane of the Stomach? By J. A. Wesener, Ph.C., M.D. Reprint. 1895.

Clinical Notes on Psoriasis, with Especial Reference to its Prognosis and Treatment. By L. Duncan Bulkley, A.M., M.D. Reprint. 1895.

Treatment of Uterine Retrodisplacements by Vagino Fixation, with Reports of Cases. By Frederick Holme Wiggin, M.D., New York. Reprint. 1895.

Transactions of the Colorado State Medical Society, Twenty-fifth Annual Convention. By-Laws and List of Members, Denver: Published by the Society. June, 1895.

Pioneer Work in Opening the Medical Profession to Women. Autobiographical sketches by Dr. Elizabeth Blackwell, author of "The Moral Education of the Young," etc. London: Longmans, Green & Co. 1895.

Transactions of the Obstetrical Society of London, Vol. XXXVII, for the year 1895. Part III for June and July. Edited by William Duncan, M.D., Senior Secretary, and Percy Boulton, M.D. London: Published by the Society. 1895.

Notes on Surgery for Nurses. By Joseph Bell, M.D., F.R.C.S. Edin., Consulting Surgeon to the Royal Infirmary, and Surgeon to the Royal Edinburgh Hospital for Sick Children. Fourth edition, thoroughly revised. With an additional chapter of General Advice to Nurses. Edinburgh: Oliver & Boyd. 1895.

A Hand-Book of Medical Diagnosis for Students. By James B. Herrick, A.B., M.D., Adjunct Professor of Medicine, Rush Medical College; Professor of Medicine, Northwestern University Woman's Medical School; Attending Physician to Cook County Hospital; Assistant Attending Physician to Presbyterian Hospital, Chicago. With 80 illustrations and two colored plates. Philadelphia: Lea Brothers & Co. 1895.

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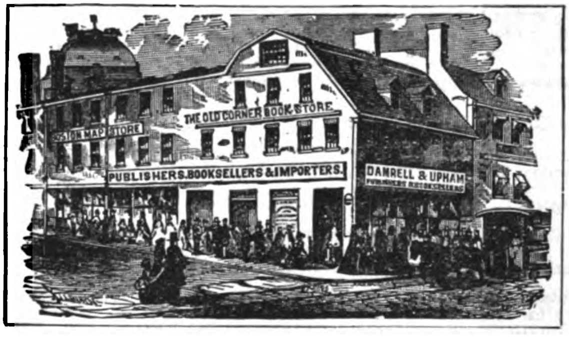

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum........ 1
Antikamnia Chemical Company...Antikamnia 2
Apollinaris Co........ 1
Ayer's Hygienic Coffee........
Baker, L. W., M.D........Riverview 1
Baker, Dr. W. H........Caro 1
Battle & Co........Bromidia 2
Bellevue Hosp. Med. Col..... Sessions of '94-95 1
B. H. R. Distilling Co........
Boehringer & Soehne........Ferratin 1
Borine Chemical Co........23, 2
Bowdoin College........Medical Department
Bowker, Dr. E. M........Vaccine Virus
Boylston Medical Prize Questions........
Castle, W. & Co........Steam Steriliser
Channing, Dr. Walter........
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Cobb, Dr. F........
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Coll. of Physicians and Surgeons, Boston...
Crittenton, C. N........Hydroleine, etc. 4, 13, 2
Cutter, Dr. W. P........
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Removal........
Ring, Dr. Allan Mott........Nervous Disease
Rosse, Dr. Irving C........
Russell, Dr. F. W........Card
Schulze-Berge & Koechl........Migranin, etc. 5
Scott & Bowne........
Stedman, Dr. Henry R........Car
Stillings, Dr. L. C........Car
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Thayer, Henry & Co........
Theodore Metcalf Co........Coc
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PAGE

ORIGINAL ARTICLES.

Etiological Puzzle. *By James C. White, .D.*, Professor of Dermatology in Harvard niversity 557

nical Experience in Abdominal Surery at the Massachusetts General ospital. *By J. Collins Warren, M.D.* (Connued.) 557

Brief Resume of the Indications for ysterectomy. *By Albert H. Tuttle, S.B., .D.*, Cambridge, Mass 559

CLINICAL DEPARTMENT.

r Months' Hospital Work in Abdominal urgery. *By F. W. Johnson, M.D.*, Surgeon, ynecological Department, St. Elizabeth's Hosital; Surgeon, Gynecological Department, Cary Hospital, etc. (Concluded.) 561

id Increase of Opacity in Senile Cataacts. *By F. W. Ellis, M.D.*, Monson, Mass ... 565

Unusual Case of Aortic Regurgitation. *Herman F. Vickery, M.D.*, Instructor in linical Medicine, Harvard University 566

ase of Fatal Diarrhea (Cholera) Due to scarides. *By N. C. Mitra, M.A., M.D.*, anchi, Bengal, India 567

MEDICAL PROGRESS.

ent Progress in Genito-Urinary Surery. *By F. S. Watson, M.D.* 567

Double Castration for Hypertrophy of the Prostate.— Movable Kidney. — Experimental Removal of Portions of the Kidney.—Tuberculosis of the Genito-Urinary Organs.— Primary Cancer of the Urethra.

REPORTS OF SOCIETIES.

American Dermatological Association. Nineteenth Annual Meeting, Windsor Hotel, Montreal, Can., September 17-19, 1895. (Continued.) 569

The Epitrichial Layer of the Epidermis and its Relationship to Ichthyosis Congenita.— A Unique Case of Agminate Folliculitis of Parasitic Origin. — Notes on Drug Eruptions. — A Remarkable Drug Eruption.

RECENT LITERATURE.

Pediatrics. By Thomas Morgan Rotch, M.D. Philadelphia: J. B. Lippincott Co. 1896 572

EDITORIALS.

Diagnosis of Malarial Fevers by Organisms in the Blood 574

The Buried Tendon Suture 574

Medical Notes 575

Congress of American Physicians and Surgeons.

New England.
Acute Infectious Diseases in Boston. — The Medical Department of Dartmouth College.

New York.
Civil Service Rules Applied to Hospital Appointments. — The State Board of Health and the Milk-Supply of Cities.— Professor Maragliano's Serum given a Trial in New York.— Leprosy in New York. — Summary Dismissal of the Medical Staff of the Fire Department.

CORRESPONDENCE.

The Study of Dermatology in Europe. *Charles J. White, M.D.*, Boston. (Concluded.) .. 577

Death by Submersion. *Edwin L. Morgan, M.D.*, Washington, D. C. 579

Resuscitation after Submersion. *F. Gordon Morrill, M.D.*, Boston 579

The Index Medicus. *John S. Billings, M.D., Robert Fletcher, M.D.*, Washington, D. C. 579

MISCELLANY.

Medical Officers of the State Militia and the Army Medical School, Washington ... 577

Meteorological Record, November 23, 1895 .. 579

Record of Mortality, November 23, 1895 579

Army and Navy Services 580

International Congress of Psychology ... 580

Harvard Medical School. Evening Lectures 580

Recent Death 580

Books and Pamphlets Received 580

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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Original Articles.

AN ETIOLOGICAL PUZZLE.[1]

BY JAMES C. WHITE, M.D.,
Professor of Dermatology in Harvard University.

In these days, when we are beginning to appreciate the diversity of ways in which tuberculosis establishes itself by direct inoculation upon the cutaneous tissues, it is important to recognize all possibilities of infection. It is by such knowledge, and its general diffusion by ourselves among the people, that we shall some time succeed in abolishing the needless ravages of this dreadful disease.

Let me first mention an instance, such as we are all constantly meeting with, of one of the most frequent methods of inoculation, and which is entirely preventable. I was recently consulted by a mother and daughter, the latter thirteen years old, both of whom presented lesions of tuberculosis verrucosa upon the hands, multiple upon the child. They had developed within the previous eighteen months. The father had recently died of phthisis, and both wife and daughter had habitually washed the handkerchiefs and other receptacles of the sputa used by the deceased. Can there be any doubt how the cutaneous infection was produced in this case? Could we devise a more likely method of inoculation than to macerate the epidermis by long immersion in hot water and then apply sputa swarming with active bacilli? Pulmonary tuberculosis was also just developing in the girl. It is not so easy to determine positively how infection of these internal organs was accomplished, but we should not ignore the possibility of secondary infection through open cutaneous lesions in such cases, considering how common it is for children, or even adults, to carry a sore upon the hand to the mouth and suck or moisten it for the soothing effect thus obtained. Had this mother known the danger of handling the handkerchiefs and sputa of consumptives, they might have easily avoided inoculation.

But the case to which I desire especially to call your attention is one which illustrates the multiform elements which possibly enter into the question of etiology at times in connection with this disease. A girl, eighteen years old, came to my clinic last June with perfectly characteristic tuberculosis of the lobes of both ears. They were thickened, of a dull red hue, shiny and slightly scaly, and of a boggy consistence. They had been gradually assuming this condition during the last eight years. It was an interesting problem to determine how two such isolated and symmetrical points could be so uniformly affected. Of course some connection with the boring of the ears at once suggested itself as an explanation, and on inquiry the following data were obtained. The ears were pierced eight years ago. They remained inflamed a long time; in fact they never healed, and this primary condition developed gradually into the present slowly progressive affection.

(1) The ears were bored by a woman, who died soon afterwards of consumption. She used a darning-needle, and threaded it after piercing the lobes.

(2) My patient had a sister who dressed the ears whilst sore, and this sister died soon afterwards of "quick consumption."

(3) The ears were frequently bathed with cow's milk after the operation.

Accepting the facts as thus elicited, it is evident that there were three possible sources of infection in the case:

First, the operator may have wetted the needle in her mouth on the supposition that it would enter the skin more readily, or she may have treated the end of the silk in the same way (a common practice) before threading the needle and drawing it through the lobes, both promising methods of infecting the wound with the bacillus tuberculosus.

Second, the ears were constantly dressed by the sister who was at the time in "quick consumption." We well recognize what opportunities were thus afforded for the transference of infective material from the one to the other. The fingers of the nurse were probably often contaminated by handling her handkerchief or other receptacle of the expectoration, or the mouth may have been wiped with them after coughing. With these fingers she was habitually making applications to the open wounds. Perfect bodily cleanliness is a far more difficult (often an impossible) condition in country life than with the ever-at-hand water conveniences of the city residence. We must not forget also that dried bacilli from contaminated clothing and furniture of the infected house may have entered the wounds through the medium of the air.

Third, the inflamed ears were frequently bathed with cow's milk to reduce the inflammation after the operation, a common household practice in the country. Now that we have become aware of the enormous prevalence of bovine tuberculosis, and of the consequent contamination of milk, we must admit the possibility of such an origin of the disease in my patient, and of the danger in the bread-and-milk poultice of domestic surgery.

I have thus briefly stated the possible methods of infection in this case of tuberculosis of the skin, because the accessible etiological data present in an exceptional way the diversity of origin in this affection, and because it illustrates in a striking manner the foes to health which may lurk unsuspected in every household until the knowledge regarding such dangers and the means of avoiding them is made a part of every child's common school education.

CLINICAL EXPERIENCE IN ABDOMINAL SURGERY AT THE MASSACHUSETTS GENERAL HOSPITAL.

BY J. COLLINS WARREN, M.D.

(Continued from No. 22, p. 539.)

PYOSALPINX.

This is one of the most common of abdominal affections now operated upon at the hospital. The operations are, as a rule, difficult and tedious; but the patients do well, and eventually recover a satisfactory condition of health. Tubercular peritonitis is a not infrequent accompaniment of this affection, and gonorrhea a not infrequent cause. An important detail in the technique of the operation is the careful walling off of the diseased tubes from the general peritoneal cavity. It is also an excellent plan to aspirate the tubes with the most scrupulous care before attempting their removal. The chances of spilling pus into the peritoneal cavity are thereby greatly diminished. The Trendelenburg position greatly facilitates these manipulations. The old pus in these tubes is, however, often of a mild, unirritating character; an entirely different substance, from a clinical point of view, from that found in an appendicular abscess. Cultures taken from these tubal abscesses have not infrequently proved to be sterile. There were eleven cases of this disease, and in one only was there a fatal result. In this case the condition of the patient was such that the operation was performed, chiefly as a last resort.

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[1] Read at the Meeting of the American Dermatological Association, 1895.

Double Pyosalpinx, Laparotomy. — A domestic, single, thirty years old, entered February 9, 1894. Always well, except for constipation, for last three years, until January 1st, when she had an attack of general, lancinating, abdominal pain lasting one day, and relieved by hot poultice. Vomited once. Then well until a week ago, when she had a chill which subsided without other symptoms. On the morning of entrance she had an attack of abdominal pain, situated first at the umbilicus, but soon becoming general and accompanied by vomiting. Bowels moved within twenty-four hours. No chill.

On physical examination her general nourishment was good. The abdomen was slightly distended, with tenderness most marked in the right iliac fossa. Dull in left iliac fossa, tympanitic elsewhere. Vaginal examination was negative. Rectal examination showed tight stricture. She was given liquids without milk and morphine. Hot applications to abdomen. In consultation the diagnosis of probable intestinal obstruction was made, and immediate operation urged.

February 10th, Littré's incision was made, four inches long. A large amount of foul-smelling, turbid serum escaped from the peritoneal cavity, but no obstruction was found. The incision was then closed, and a five-inch median incision made. More of the foul serum escaped from the general cavity. The right tube was found much enlarged, its fimbriated extremity being branched and reddened like mucous membrane. Attached to the posterior uterine wall was a cyst the size of a lemon, which ruptured, allowing the escape of a cheesy, puriform material. The cyst was tied and removed, as was also the right tube. The left tube, which was enlarged, was left. Both wounds were closed about glass drainage-tubes after irrigating the abdominal cavity with sterile water. Sterile dressing and swathe applied. Although the patient was in very poor condition, she rapidly recovered from the anesthetic.

The tubes were sucked out twice a day, the discharge being very foul. Her condition continued poor, and on the seventh day a stitch abscess was found in the median wound. On the next day pus was found burrowing in the abdominal wall. Tubes were inserted. On the whole the wounds granulated well, although the patient gained strength very slowly.

On April 20th she was sent to the Convalescent Home, and left there May 8th.

June, 1895. In perfect health. Active and at work. No cough. Has gained much in flesh and strength.

Pelvic Abscess, probably of Tubal Origin; Laparotomy, Recovery.—Mrs. L. P. K., forty-seven years of age, entered November 5, 1894. Had suffered pain on the right side for twenty years, which had been treated for liver complaint. For the last year patient has had pain at time of defecation and the movements had the appearance of being mixed with pus. Thought at one time that something broke in the rectum. Suffers from bearing-down pain, and has pain when in sitting posture. Although fairly stout, has already lost considerable weight. An examination shows some distention of the abdomen, but no dulness. By vaginal examination a hard mass is felt in front of the rectum. The rectum is somewhat constricted by this mass, and at the time of entrance the possibility of a stricture of the rectum had been suggested.

On November 9th an examination was made under ether, and the finger was passed into the mass through a small opening which was found some distance from the anus. This opening was dilated, and about three ounces of pus evacuated. After thorough syringing with sulpho-napthol (1–500), a T-shaped rubber drainage-tube was inserted. Her condition after the operation remained much the same. The temperature ranged somewhat higher and varied greatly; the patient began to lose flesh rapidly and became weaker daily.

On November 28th a median abdominal incision was made. The abdominal cavity, when opened, was found to contain a considerable amount of bloody serum, and the pelvis, particularly that part behind the uterus, was found to be filled with adhesions. With some difficulty these were separated, and the finger finally reached a small pus cavity between the uterus and the rectum. The finger could be passed down through this, and be made to communicate with a finger of the other hand inserted into the rectum. No attempt was made to free the uterine appendages, as the operation was performed principally for the purpose of effecting a through and through drainage. The cavity having been thoroughly disinfected, was packed with iodoform and sterilized gauze, and the external wound was partially closed. From this time on the patient continued to improve slowly. The sinus that remained after the stitches were removed occasionally discharged fecal matter. It was systematically washed out from the beginning, so that fluid flowed freely through the dilated sphincter at each washing. Her emaciation was extreme, and the temperature frequently rose, although the tendency was towards the normal line.

She left the hospital March 9th, with directions as to the washing of the sinus. She reported July 2, 1895, that her general health was good. There still exists a sinus the size of the lead of a pencil. There is a slight, white discharge from the rectum.

This case is reported as a good example of what may be accomplished after a long and tedious struggle with unfavorable conditions.

Double Purulent Salpingitis and Oöphoritis, Salpingo-Oöphorectomy, Recovery. — Entered, December 21, 1894. Age twenty-four, married for four years. One child and two miscarriages (at four months and seven months). Menstruation normal. Has leucorrhea, and pain in left iliac fossa. No specific history. Thirteen weeks ago there passed from the vagina a whitish mass appearing like an egg with no shell. She appeared in good condition and well nourished. There is considerably muco-purulent discharge; to the left of and behind the uterus can be felt a mass moving with the uterus. She was put on hot antiseptic douches; but the mass increased in size, pushing down the uterus. There was no fever and no leucocytosis; but on account of the non-improvement in local symptoms, an operation was advised.

January 4, 1895, a four-inch median incision opened the abdomen. A cyst of the left tube was tapped, and seven ounces of pus evacuated. After tearing adhesions the tube was removed close to the uterus, and the stump cauterized. The right tube was treated in the same manner, and the abdominal wound partially closed with three iodoform gauze wicks deep into pelvis. Three days later the wicks were withdrawn, and on the next day the bowels were moved. The wound closed for the most part by first intention. There was some sloughing of the fat at the site of the wicks. This was dressed with myrrh wash, and gradually closed in.

The patient made an excellent convalescence, and was discharged well.

July 3, 1895. "Never felt better than at present." No pain, no tenderness, no hernia.

Chronic Purulent Salpingitis, Salpingotomy, Recovery. — Entered December 1, 1894. Twenty-four years old. She has been married eight years; and although she has never tried to prevent conception, she has never been pregnant. Catamenia not profuse nor very bloody. For four weeks has had a constantly increasing pain in the lower abdomen without distention. Last catamenia six weeks ago. Bowels constipated. Appetite poor. Temperature 101.8°, pulse 120, respiration 32. She was a poorly nourished woman, with prominent eyes and a dry, coated tongue. General tenderness in lower abdomen, with distention and tympanitic dulness over pubes. Behind a long, soft cervix uteri could be felt a soft boggy mass, tender and seemingly fluctuating.

She was fed up as well as frequent vomiting would allow, and was operated upon on December 3d. On entering the abdominal cavity a large cyst, the size of grape-fruit, was encountered. This was punctured and ten ounces of pus sucked out, the peritoneal cavity being walled off with gauze. The cyst was found to be of the left tube, which was dilated, full of pus and tied down by adhesions. These were tied and severed, and the tube was ligatured and removed close to the uterus. Iodoform gauze wick and some gauze packing were left in the wound, which was partially closed by three sutures.

The patient made an excellent recovery from ether and from the operation. The bowels were moved by enema on the second day, and on the third day adhesions had isolated the wound, which granulated well, being stimulated occasionally.

January 15, 1895. An abdominal supporter was fitted, and she was discharged, much relieved.

July 13, 1895. "Feeling first-rate" at present. After leaving had a cold, and with cough scar bulged, but now solid. No pain.

Double Pyosalpinx, Laparotomy, Death. — Thirty years old and married. Only one child. Entered October 22, 1894. Catamenia always regular and normal. Five weeks ago, pain in region of both ovaries—paroxysmal and requiring morphia. Has had chills and vomiting. Appetite poor. Bowels regular. At the time of entrance the appearance of the patient was very unfavorable. She was anemic and pasty-looking. A systolic murmer at apex not transmitted. Her pulse was feeble and rapid. After entrance had chills, fainting, vomiting, anorexia. Given digitalis. It was evident that she had delayed surgical interference until her chances of success had been greatly diminished. An attempt was made to build up her strength by rest and good nursing; but her condition not improving, it was decided to make an attempt to remove the tubes.

On October 31st a median incision was made. Large, firm masses were found in both iliac regions. Intestines were adherent on left side. Adhesions separated, and distended tubes lifted out of abdomen, both bursting and liberating much pus. On account of the poor condition of the patient the operation was hurriedly completed by swabbing out the pelvic cavity, packing with iodoform gauze and suturing the upper portion of the wound. She was stimulated with strychnine (one-twentieth of a grain subcutaneously), and given an enema of brandy and salt solution. The foot of the bed was elevated, and stimulants freely administered. Towards evening her pulse became poor, but was strengthened by stimulation. A weak, rapid pulse and extreme restlessness with pallor pointing to hemorrhage, the wound was opened in the morning, but nothing found. Delirum alternating with drowsiness ensued, with vomiting and weaker pulse. No distention, no tenderness.

At 11 A. M. November 1st, she died. At the autopsy no evidence of peritonitis was found.

(To be continued.)

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A BRIEF RÉSUMÉ OF THE INDICATIONS FOR HYSTERECTOMY.[1]

BY ALBERT H. TUTTLE, S.B., M.D., CAMBRIDGE, MASS.

In selecting so broad a subject for this paper I have assumed merely to scan the topic, touching on the most salient features, or those which have proved of the greatest personal interest, and to present in a general way the status of this element of the operation as it appears to date.

In the early days of hysterectomy the mortality from the operation was so great—50 to 75 per cent.—that there were but few indications sufficiently potent to induce either the physician to recommend or the patient to suffer the procedure; and these were mostly malignant diseases, carcinoma of the cervix or body of the uterus or malignant adenoma and sarcoma. With the development of the operation, better technique, and more perfect knowledge of asepsis, there has been an improvement in the results greater than one could hardly have hoped for, and as a consequence there has been a wider extension of the usefulness of the operation. The pathological conditions just mentioned form, perhaps, the most important class of cases where the operation is indicated, and where the whole womb should be removed; but to the list we must now add all forms of fibroid tumors that give rise to constitutional changes, such as weakness, loss of tone, anemia, etc., as well as those cases where the local symptoms, pain, hemorrhage and weakening discharges are excessive and do not give way to medical treatment. The prognosis of fibroid tumors, once considered of a benign character, has materially changed; experience has taught us that they are clinically malignant at times, that is, they cause changes in the system, locally or generally, that lead to a fatal termination. The most prominent of these changes is disease of the kidneys with a symptomatology similar to interstitial nephritis.

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[1] Read before the North Essex District Medical Society, October 9, 1895.

Another example of clinical malignancy is found in the sequelæ: inflammation, ulceration into neighboring organs, fistulas, exhausting discharges, death.

Beside these results, one should also consider the occasional degeneration of fibroid tumors into true malignant growths; this is similar to those forms of sarcoma which remain circumscribed for a long period and then shoot out, diffusely infiltrating through the tissues. I need also mention that sometimes the blood-supply of a fibroid is cut off, and gangrenous changes, followed by septicemia, terminate in death. Pregnancy in the presence of fibroid tumors forms another complication which is often of a most serious nature. A wide experience of certain careful observers has led them to state that with the existence of a fibroid uterus failure in health will sooner or latter occur, and restoration can only be expected after the removal of the tumor. Among the earliest men to advocate removal of the uterus for fibroids was Dr. Irish, of Lowell; among the latest is Jacobs, of Brussels. The latter says that the presence of a fibroid tumor is always an indication for removal of the uterus.

The removal of the uterus *per vaginam* for the treatment of pus-tubes was first performed by Krug in 1890. Thoroughly realizing the more complete recovery of those cases where the uterus was removed for carcinoma than where the Hegar-Battey operation was performed for suppurating disease of the tubes, Krug resolved to do vaginal hysterectomy for an enlarged retroverted uterus with bilateral disease of the adnexa. The immediate and remote result was perfect. However, owing to severe criticism he did not repeat the operation for two years, but continued to compare the results of hysterectomy for fibroids complicated with tubal disease and the simpler operation of removal of tubes and ovaries. The contrast between the results was so great, the conclusion was reached that it was due to the retained diseased uteri.

F. Henrotin presented a paper before the Chicago Gynecological Society at the May meeting, 1892, in which he advocated hysterectomy for pelvic suppuration, and claimed by this means, not only to get rid of a uterus as much diseased as the tubes, but also to establish better drainage and lower the mortality. His propositions were entirely endorsed by Clarke, Lyons, Watkins, Byford, Dudley and Newman of that city, the latter emphasizing especially the better drainage of the pelvis obtained in this manner. Robinson partly endorsed this paper, that part that applied to removal of the uterus and tubes where the tubal infection came from the uterus.

In his paper, read at the Pan-American Congress, September 18, 1893, Baldy, of Philadelphia, placed pelvic suppuration among his indications for hysterectomy. He said it was the operation of choice in all cases where the uterine walls were infiltrated with pus and the uterus materially enlarged.

In 1894 Penrose read a paper in which suppurating disease of the tubes was stated as the pathological condition that induced him to remove the uterus.

Both complete vaginal hysterectomy and incomplete supra-vaginal amputation of the uterus are performed for the relief of pelvic suppuration, according to the individual notions of the operator.

Prolapse of the Uterus. — The accidental removal of the prolapsed uterus *per vaginam*, owing to mistaken diagnosis for tumor, probably first led to the suggestion of vaginal hysterectomy. In 1893 Baldy said, "All cases in which the usual surgical means have been tried and failed should be subjected to hysterectomy as a sure means of cure." He reported six cases operated upon in this manner, all of which were complete successes. Those cases where the enlarged uterus has a depth of five or six inches, with profuse discharges and hemorrhages, were especially applicable to hysterectomy. He further stated that the operation should always be followed by plastic operations of the anterior and posterior vaginal wall for repair of the relaxed vagina. About the same time Irish reported to the Boston Gynecological Society a case of prolapse which he had treated by hysterectomy, the patient making a good recovery. In November of the same year McCosh, of New York, published an article on the results of vaginal hysterectomy, in which he gave the histories of six cases where the uteri were removed for the relief of prolapse. Three of these cases were reinforced by perineorrhaphy or colphorrhaphy. One case only proved satisfactory; two others were partially successful — one, however, died from renal and cardiac disease in a few months, so the final result could not be determined definitely. The other three cases were complete failures, a mass as large as the original protruding from the vulva in each case at the end of one year after the operation. The results of McCosh's report make prolapse of the uterus a problematical indication for hysterectomy.

Puerperal Septicemia. — In September, 1893, Montgomery, of Philadelphia, said he believed that there were many patients suffering from puerperal sepsis in whom the removal of the uterus was clearly indicated. To the present time twenty cases of hysterectomy for this condition have been reported, with a result of fourteen deaths and six recoveries. These cases represent full-term pregnancies and abortions, and show a considerable variety of pathological changes that include pus-tubes, abscesses of the uterine walls, ovaries and broad ligaments, suppurating metritis and endometritis, gangrenous condition of the uterine wall and diptheritic endometritis. The work has been performed by men of no small calibre, as will be seen by the following list: Hirst of Philadelphia, six cases, two recoveries; Boldt of New York, five cases, all died; Baldy of Philadelphia, two cases, both died; Kelly of Baltimore, Lapthorn Smith of Montreal, Pryor of New York, and E. B. Davis of Philadelphia, each one case, all of which recovered; Peterson of Grand Rapids, Montgomery of Philadelphia and Ashton of Philadelphia, each one case, all of which died. The excessive mortality of hysterectomy in the treatment of puerperal sepsis has many adequate causes: the super-imposition of a severe operation upon a constitution already much weakened by a trying labor; the great variety of infections and the difficulty of distinguishing them clinically in time for safe operation; the mixed type of pathological lesions, the exact nature of which cannot be exactly determined until the abdomen is opened; our present incomplete knowledge of the clinical indications and contra-indications for operation: pulse-rate, temperature, tenderness of abdomen, tympany, etc.; and finally should be mentioned the natural virulency of the disease, a fatal toxemia at the time of operation, extension of processes beyond the reach of extirpation, and the dangers of secondary infection. With these facts staring us in the face we have to consider that many cases of puerperal sepsis have recovered without surgical interference in regard to which it is only fair to state that the extent and nature of the pathological changes were not exactly determined, and are supposed to have been of a mild type and that these recoveries weaken to a certain extent the already poor statistics from operation. However, a close examination into the report of the twenty cases operated on reveals that the pathological lesions from which some of the cases recovered were of such a character that death would have inevitably followed if it were not for the surgical intervention. Such being the case, I can unhesitatingly say that there are conditions found at times in the course of puerperal sepsis that are good and true indications for hysterectomy; the extension of the operation, however, must be extremely limited until our knowledge of the intimate relations between the types of infection, their clinical manifestations, and pathological lesions is better formulated and good enough to enable one to make a sufficient diagnosis.

Tumor of the Ovaries. — Owing to the close connection between the ovary and uterus, I performed a total hysterectomy for the relief of bilateral fibro-cystic disease of the ovary, September, 1894, on a patient whose family history showed the decease of a sister about one year before from sarcoma-cystica-ovariorum. The case made a good recovery, and has remained well since. In selecting this operation I considered the natural tendency of these tumors toward malignancy, the death of the sister, the usual fatal termination after the removal of malignant tumors of the ovary from extension or recurrence of the disease and the possibility of reducing the danger of recurrence by removal of the uterus. Dr. Augustus P. Clarke has placed papilloma and fibroma of the ovary among his indications for hysterectomy. Recently Dr. Irish removed a uterus, owing to the severe and annoying symptoms that continued after both ovaries were removed for cystic disease. Improvement was immediate and marked, leading him to reflect upon his work in hysterectomy and ovariotomy and compare results; his conclusion that patients made a more complete and satisfactory recovery after hysterectomy than ovariotomy was communicated to the Gynecological Society of Boston at the September meeting. This, I think, is the experience of most of us.

Inversion of the Uterus. — Baldy has reported one case where, after repeated unsuccessful attempts to replace the organ, it was removed.

Ruptured Tubal Pregnancy. — Penrose removed the uterus in one case for this trouble, and claims that where the uterus forms part of the wall surrounding the accumulation, hysterectomy facilitates the operation and perfects hemostasis. Clarke also speaks of the more perfect control of hemorrhage during the operation for ectopic pregnancy, in certain cases, by removal of the uterus.

Cæsarean Hysterectomy. — This subject is so well understood that I need only mention it among the indications of hysterectomy.

The Qualities of the Ideal Practitioner. — "Bold when sure. Cautious in danger. Kind to the sick. Friendly with fellow-workers. Constant in duty. Not greedy of gain." — *Guy de Chauliac.*

Clinical Department.

FOUR MONTHS' HOSPITAL WORK IN ABDOMINAL SURGERY.

BY F. W. JOHNSON, M.D.,
Surgeon, Gynecological Department, St. Elizabeth's Hospital; Surgeon, Gynecological Department, Carney Hospital, etc.

(Concluded from No. 22, page 543.)

CARNEY HOSPITAL.

Case I. N. H. A., aged forty-six years, single.

Present Complaint: Almost constant pain in the left ovarian region. Frequent and scalding micturition for four months. Loss of strength.

Menstruation began early; flow moderate, lasting six to eight days; regular up to three months ago; since then has menstruated every three weeks. Dysmenorrhea the last two periods.

Present Illness: Never rugged. Phthisical family history. Four months ago was taken sick with severe pain in the left loin and cystitis. Was in bed five weeks. Since then has been in very poor health.

Diagnosis without Ether: Pus tube discharging into bladder. Cystitis.

Operation, March 23d. Right tube and ovary looking normal, were not removed. The left ovary was the seat of a cystoma the size of a mandarin orange. The cyst was of a dark greenish color and the pedicle had twisted three times on itself pretty effectually cutting off the blood-supply. There had been free hemorrhage into the cystoma, the anterior surface of which was adherent to the bladder. The cystoma was dissected out of the bladder wall catgut being used to close the opening. Omentum and intestines were adherent to the posterior surface of the tumor. Silk was used for the pedicle, and the stump was cauterized. The uterus was small and contained a small fibroid at the back of the fundus.

Discharged May 18th. Had a long, tedious convalescence, due to painful micturition and pain referred to the bladder. Has slowly improved since getting home.

Case II. G. R. S., aged thirty-three years, married.

Present Complaint: Feeling of pressure on the rectum and painful defecation. Pain in the right ovarian region. Frequent micturition.

Marital History: One child. No miscarriages.

Menstruation began at fourteen years; flow quite free, lasting seven to ten days, regular, little pain.

Present Illness: Pressure at the top of the head, with dizziness for some months. Always nervous and irritable. Chills and fever when fifteen.

Diagnosis: Retroflexion. Salpingitis.

Operation, March 23d. A constriction was found completely closing both Fallopian tubes, one and one-half inches from either horn of the uterus and at a point one inch distant from either fimbriated extremity. Right ovary was enlarged, cystic, and the seat of a large hematoma. Left ovary was cystic. Both tubes and ovaries were removed.

Discharged May 18th. Well.

Case III. M. F. D., aged thirty-two years, married.

Present Complaint: For five years has had pain in the lower part of the abdomen and back. Frequent and painful micturition. Unable to work.

Marital History: No children. No miscarriages.

Unsuccessfully operated on two years ago for imperforate vagina.

Menstruation began at twelve years, lasting three days; flow very scanty, regular; severe pain.

Diagnosis: Fibroid or dermoid, probably dermoid.

Operation, May 11th. Both tubes and ovaries were fastened by adhesions to the posterior surface of the uterus. Both tubes were the seat of hydrosalpinx. On the right side the hydrosalpinx was the size of a hen's egg. Both ovaries were cystic. Tubes and ovaries removed. The appendix, thickened at its end, was adherent to the right tube. Appendix removed close to the intestine. Its stump was cauterized and covered with peritoneum. Springing from the upper and posterior surface of the uterus was a fibroid, partly interstitial, partly subserous, the size of a base-ball. Splitting the capsule, it was enucleated, the cavity in the uterus being closed by a continuous suture of silk.

Discharged May 30th. Well.

Case IV. W. E. E., aged thirty-five years, married.

Present Complaint: Backache for fifteen years. Pain, almost constantly, in the right ovarian region.

Marital History: No children. One abortion at five months, two years ago. Abortion was followed by chills and profuse flowing.

Menstruation: Has been flowing some every day for five months.

Cystitis when sixteen. Peritonitis one year ago. Gonorrhea five months ago.

Diagnosis: Chronic salpingitis and ovaritis, with adhesions.

Operation, May 21st. Uterus, tubes and ovaries were matted together by adhesions. On the right side the ovary was the size of a base-ball, with gelatinous contents. On the left there was an enlarged and thickened tube and cystic ovary. Both tubes were removed with the ovaries.

Discharged June 11th. Well.

ST. ELIZABETH'S HOSPITAL.

Case I. M. B., aged twenty-seven years, married.

Present Complaint: Painful micturition. Backache. Pain in the left ovarian region.

Marital History: One child. No miscarriages.

Menstruation began at twelve years; flow profuse, lasting six days; irregular, going five to eight weeks; severe pain the first day.

Diagnosis: Retroflexion. Left ovary much enlarged, and prolapsed down behind the uterus.

Operation, March 5th. Left ovary full of retention cysts. Left tube and ovary removed. Ventral fixation done.

Discharged, April 17th. Well.

Case II. A. T., aged twenty-three years, married.

Present Complaint: Constant pain in the right ovarian region, backache, and bearing down.

Marital History: One child. No miscarriages.

Menstruation began at sixteen years; flow moderate, lasting a few days, regular, not painful.

Diagnosis: Tumor of left broad ligament.

Operation, March 13th. Tumor on the left side removed. Both ovaries were cystic, and with the tubes were removed.

Discharged March 30th. Well.

Case III. L. R., aged eighteen years, single.

Present Complaint: Pain with distention throughout the abdomen. Chills and night-sweats.

General Condition: A rather emaciated young girl, skin muddy and rough, mucous membrane pale, bright-red spots on cheeks. Knees drawn up. Anorexia. Temperature 101° to 104° at night. Pulse 120 to 140. She had been in bed with peritonitis more or less severe since December, 1894. The cause of the trouble was said to have been a criminal abortion.

Diagnosis: General peritonitis.

Operation, March 24th. An operation offered her a small chance of recovery. The temperature and pulse just before the operation were respectively 103° and 140. A thin-walled abscess containing a small quantity of thin, brown, sour-smelling pus was found on the right side just at the brim of the pelvis. Tubes and ovaries were healthy except that they were covered with adhesions. The abscess cavity was thoroughly washed out with a normal salt solution and packed with iodoform gauze. Abdominal incision not closed at all.

Discharged March 25th. Dead. She scarcely rallied from the operation.

Case IV. A. K., aged seventeen years, single.

Present Complaint: Constant severe pain in the left ovarian region. Severe dysmenorrhea requiring morphine for its relief. Unable to work.

Menstruation began at thirteen years; flow moderate, lasting seven days, regular, painful.

Diagnosis: Prolapsed and adherent tubes and ovaries.

Operation, March 26th. Left ovary prolapsed, enlarged, cystic, and adherent. Right ovary cystic. Both tubes and ovaries were removed.

Discharged April 18th. Well.

Case V. A. F., aged thirty-two years, married.

Present Complaint: Backache and bearing down. Menstrual headaches. Dysmenorrhea.

Marital History: No children. One miscarriage at seven months, two years ago.

Menstruation began at fourteen years; flow profuse, lasting seven days, regular. Severe pain in the left ovarian region.

Diagnosis: Retroversion with strong adhesions. Chronic endometritis.

Operation, March 27th. Tubes and ovaries healthy. Uterus freed from adhesions and a ventral fixation done. Uterus curetted.

Discharged April 24th. Well. Uterus in position.

August 1, 1895. No dysmenorrhea, backache, bearing down or headaches. Uterus in position.

Case VI. A. C., aged thirty-four years, married.

Present Complaint: Pain in the left ovarian region for seven years. Backache.

Marital History: Two children. Two miscarriages.

Menstruation began at twelve years; flow moderate, lasting two days, irregular, quite painful.

Had peritonitis five years ago.

Diagnosis: Small cystoma of the left ovary.

Operation, April 23d. A cystoma of the left ovary as large as an orange was removed. The right ovary was enlarged and cystic. It, with the tube was removed. Catgut was used throughout this operation, even in closing the incision in the abdominal walls.

Discharged May 17th. Well.

Case VII. E. F., aged forty-two years, widow.

Present Complaint: Standing, coughing and sneezing cause pain in the median line in the lower part of the abdomen, where there is a hernia the size of the fist.

Marital History: No children. No miscarriages.

Menstrual History: May, 1894, a hysterectomy was done for a fibroid the size of a cocoanut, and since then she has not menstruated.

Diagnosis: Ventral hernia.

Operation, April 27th. All adhesions to the parietal peritoneum were freed, and adherent and thickened omentum ligated and cut off. Three rows of interrupted silkworm-gut sutures were used. One for the peritoneum, one for the recti muscles and one for the skin and tissues down to the recti muscles. Those through the peritoneum and recti were buried.

Discharged May 16th. Well. Union by first intention.

When operated on in May, 1894, suppuration occurred in the abdominal walls, resulting in an abscess that burrowed down to the peritoneum. I told her that she of all others ought to wear the belt constantly for one year, but she threw it aside in a few weeks.

CASE VIII. N. B., aged twenty-six years, married.

Present Complaint: Tumor in the lower part of the abdomen on the right side. Dysmenorrhea.

Marital History: One child.

Diagnosis: Large, multilocular cysto-adenoma of the right ovary.

Operation, May 4th. The incision was made large enough to deliver the cyst without rupture. A large hydrosalpinx was found on the left side. Left tube and ovary removed.

Discharged May 25th. Well.

CASE IX. M. D., aged twenty-six years, married.

Present Complaint: Backache and pain throughout the lower part of the abdomen for eight years.

Marital History: Two children. No miscarriages.

Menstruation began at thirteen years; flow moderate, lasting one week, irregular, painful. Had gonorrhea eight years ago.

Diagnosis: Small cystoma on the left side. Chronic salpingitis.

Operation, May 4th. From the left side a cystoma, the size of an egg, was removed. Both tubes were filled with pus, and were removed with the right ovary.

Discharged May 24th. Well.

CASE X. A. C., aged twenty-three years, married.

Present Complaint: Since November 18, 1894, has flowed some every day. Severe pain in both ovarian regions.

Diagnosis: Chronic peritonitis.

Operation, May 10th. Omentum, uterus, both tubes and ovaries were matted together by adhesions. Both tubes enlarged and thickened. Tubes and ovaries removed.

Discharged June 3d. Well.

CASE XI. F. F. P., aged twenty years, single.

Present Complaint: Enlargement of the abdomen for the past three months. For three years off and on severe pain in the lower part of the abdomen with sagging and dragging down. Backache. Unable to work.

Menstruation began at sixteen years; flow slight, lasting seven to ten days, irregular, very painful.

Diagnosis: Large tumor, filling the lower abdomen. Owing to the severe pain it was thought to be a fibroid.

Operation, May 18th. On opening the abdomen a tumor ten inches in length, the shape of a Rugby football, containing hair, teeth and bone was found growing from the left side with a small, short pedicle. The right ovary was much enlarged and was removed.

Discharged June 9th. Well.

CASE XII. M. M., aged twenty-five years, single.

Present Complaint: Backache with sagging and dragging down. Unable to work.

Diagnosis: Cystic tumor of the right ovary the size of a cocoanut.

Operation, May 18th. Multilocular cysto-adenoma on the right side. The left ovary was cystic and the size of a lemon. It was removed.

Discharged June 7th. Well.

CASE XIII. C. H., aged twenty-nine years, married.

Present Complaint: Dysmenorrhea and constant pain in the lower part of the abdomen.

Marital History: No children. No miscarriages.

Menstruation began at thirteen years. Was regular up to sixteen years of age, but since then menstruation has occurred not oftener than three or four times a year, and during the past two or three years has been unwell once in eight or ten months.

Diagnosis: Chronic salpingitis.

Operation, May 25th. Double hydrosalpinx found. Both tubes and ovaries removed.

Discharged June 13th. Well.

CASE XIV. M. E. T., aged twenty-three years, single.

Present Complaint: Headache, backache, and pain in the left inguinal region for four years.

Menstruation began at fourteen years; flow moderate, lasting five to seven days, regular, painful throughout.

Diagnosis: Fibroid in the posterior uterine wall.

Operation, June 1st. Fibroid, the size of a hen's egg, enucleated from the posterior wall of the uterus. Opening in uterine walls closed by over and over suture of silk.

Ready for discharge June 26th. Waiting for abdominal belt.

HYSTERECTOMIES (WOMAN'S CHARITY CLUB HOSPITAL).

CASE I. Fibroid. A. E., aged thirty seven years, colored.

Present Complaint: Severe pain throughout the lower abdomen incapacitating her for work. Weakness from loss of blood and night-sweats. Loss of flesh and strength.

Menstruation began at fourteen years; flow very profuse, accompanied with fainting spells, lasting four days, regular, no pain.

Diagnosis: A mass, solid, firmly bound in the pelvis, very sensitive, the size of a cocoanut, was found. This extended above the pelvis nearly half-way to the umbilicus. The temperature varied between 101° and 104°, and the pulse between 115 and 130 beats. There had been chills. Pyosalpinx or pus somewhere in the pelvis was expected, but nothing was found to account for the temperature, pulse and chills.

Operation, February 19th. With great difficulty the fibroid was shelled out of the pelvis, owing to adhesions which buried it posteriorly so completely that the fingers could not be got down between it and the pelvis. Complete hysterectomy. Vagina packed with iodoform gauze. Vagina closed with silk. Peritoneum closed over vagina with silk. No drainage. It was the most difficult hysterectomy I have done. The mass was made up of three large fibroids, partly subserous and partly interstitial. The interior of the uterus contained over two dozen nodules, varying in size from a pea up to a pullet's egg. Some were pedunculated, while others were more or less buried in the uterine walls.

Discharged April 26th. Convalescence was long and tedious.

CASE II. Carcinoma. L. P., white, aged thirty-six years, married.

Present Complaint: Weakness from loss of blood.

Marital History: Three children. No miscarriages.

Menstruation began at thirteen years, flow has increased since last September, at times severe hemorrhage at menstrual periods; regular, no pain, lasting five days.

Thirteen years ago had a carcinoma removed from her shoulder. There is now a constant pinkish colored vaginal discharge.

Diagnosis: Carcinoma of the cervix, not yet involving the vagina.

Operation, March 28th. Extensive adhesions between uterus, tubes and omentum, but no evidence that the disease had got outside the uterus. Complete hysterectomy. Vagina packed with iodoform gauze. Vagina not closed. Peritoneum closed over vagina. Silk used throughout the operation. No drainage.

Discharged April 25th. Well, to all appearances. Examination showed that the disease involved only the cervix.

August 1st. No flowing, pain, or vaginal discharge since getting home. She wrote that she was feeling better than for years.

CASE III. Intra-ligamentous fibroid. C. B. A., white, aged thirty-five years, married.

Present Complaint: Pain in the left ovarian region and in thighs and legs for two years. Constant, severe backache and frequent headaches.

Marital History: One child. Four miscarriages.

Menstruation began at fourteen years; flow moderate, lasting four or five days, regular; pain during the first two days.

Diagnosis: Fibroid growing from the right side of the uterus.

Operation, May 21st. On opening the abdomen the fibroid was found to be between the layers of the right broad ligament. Clamping and cutting the broad ligament on the left side in order to get more room, the broad ligament on the right side was slit through with a knife and the tumor enucleated. After it was shelled out, it was found to be attached to the uterus, half-way between cervix and fundus, by a pedicle no broader than two fingers. The cavity in the broad ligament was filled in by bringing the tissues together with buried silk sutures and the whole was covered over with peritoneum. The uterus was amputated at the internal os. Silk used throughout the operation. No drainage.

Discharged June 20th. Well.

CASE IV. Carcinoma. J. H. C., white, aged forty-four years, married.

Present Complaint: Backache for eighteen years. Constant flowing for the past two months. Been poorly for two years.

Marital History: Three children, last born eighteen years ago. No miscarriages.

Menstruation began at sixteen years; flow profuse, lasting about a week; irregular for past two years, no pain. During past three months several uterine hemorrhages.

Diagnosis: Carcinoma, extending posteriorly onto the vagina.

Operation, May 23d. As much vagina as was possible was dissected up, the opening into the peritoneal cavity behind being just above the rectum. The flaps of vagina were then folded over the cervix that had been curetted and cauterized and fastened securely by silk. The abdomen was then opened and a complete hysterectomy done. Vagina packed with iodoform gauze. Vagina closed with catgut. Peritoneum closed over the vagina with silk. Silk used elsewhere in the peritoneal cavity. No drainage.

Discharged June 16th. Weak, but feeling well. No pain and no vaginal discharge.

August 1, 1895. Examination showed no return of the disease.

CASE V. Pregnancy complicated with carcinoma. E. S., white, aged twenty-eight years, married.

Present Complaint: Loss of strength from flowing. Daily loss of blood since February, 1895. When there was no bleeding there was a profuse watery discharge.

Marital History: Five children. No miscarriages.

Menstruation began at thirteen years; flow moderate, lasting four or five days, regular until January last, not painful. More or less pain in the lower part of abdomen since February. Had never missed a menstrual period. Had no feeling as if she was pregnant.

Diagnosis: The vagina was velvety to the touch and of a violet color. The uterus reached to a point midway between the symphysis and the umbilicus. No fetal heart sounds heard. The posterior lip of cervix was the seat of quite extensive carcinomatous disease.

Operation, May 31st. Complete hysterectomy. Vagina packed from above with iodoform gauze. Vagina closed with silk. Peritoneum closed over vagina with silk. No drainage. Owing to the slipping of a clamp, about two ounces of blood were lost. From the beginning of the operation until the patient was ready for bed the time consumed was seventy-five minutes. The cervix was curetted and cauterized before opening the abdomen.

Discharged June 20th. Well.

August 1, 1895. Examination showed no return of the disease.

Dr. W. F. Whitney's Report. The specimen from the case of Mrs. E. S. consisted of the upper part of the uterus, in which was a fetus intact of about the fifth month. Section through the lower part showed a slight infiltration of what appeared to be glandular masses in places with solid masses of cells. In the part received the amount of disease is very slight, but there seems to be little doubt that it is of the nature of an adeno-carcinoma.

HYSTERECTOMIES (ST. ELIZABETH'S HOSPITAL).

CASE I. E. F., aged thirty-two years, single, white.

Present Complaint: Constant flowing for two weeks. Dragging and sagging down with backache.

Menstruation began at fourteen years; flow quite free, lasting four or five days, regular, no pain.

Diagnosis: Cystoma of the right ovary.

Operation, March 30th. On opening the abdomen a large fibroid was found. Cervix, after removal of fibroid at the internal os, was sewed over and over with silk. This stump was covered over with peritoneum held in place by fine silk. No drainage. Uterine cavity almost wholly obliterated by the fibroid.

Discharged April 20th. Well.

Convalescence was uninterrupted.

August 1, 1895. Still remains well.

The fibroid was as large as a fetal head. The ovaries were large and flattened. Each measured three inches long by one and three-quarters inches wide.

Case II. J. W. W., aged forty years, married, white.

Present Complaint: Constant pain for six weeks in the abdomen below the umbilicus. Constant feeling of pressure in abdomen. Indigestion, constipation, sleeplessness.

Marital History: Married six years. One child three years ago. One abortion five years ago.

Menstruation began at fifteen years; flow slight, lasting two days, always irregular, no pain.

Present Illness: Nervous, thin and worried. Four years ago discovered the tumor.

Operation, April 1st. The fibroid was as large as the uterus at seven months. The uterus was cut off at the internal os and the cervix sewed over and over and covered with peritoneum as in Case No. I. No drainage.

Discharged April 28th. Well.

August 1, 1895. Strong and well. Doing her housework.

Case III. A. S., aged forty-four years, married, white.

Present Complaint: For the past four years has had frequent flowing spells caused by excitement or fright, or jolting on riding in the street-cars. Much reduced in health and strength.

Marital History: Two children. Two miscarriages.

Menstruation began at thirteen years; flow profuse, lasting seven days, regular. Severe dysmenorrhea.

Present Illness: Jaundiced from head to foot. The eyes were a bright yellow, and the skin covering the face and body was of a dirty, yellowish-white color. This suggested carcinoma; but Dr. John L. Morse, after a careful examination of the blood, excluded cancer and attributed the color of the skin to anemia from loss of blood.

Diagnosis: Fibroid, the size of a football.

Operation, April 10th. The uturus was cut off at the internal os, and the cervix sewed over and over and covered with peritoneum, as in Case No. I. No drainage. Convalescence was uninterrupted.

Discharged May 9th. Well.

Case IV. S. S., aged forty-two years, widow, white.

Present Complaint: Backache, with flowing off and on for three years. Unable to work.

Present Illness: Has been losing strength for some months. During what she supposed was her last menstrual period she lost so much blood that her life was despaired of.

Diagnosis: Fibroid of the uterus, the size of a cocoanut.

Operation, May 14th. The uterus was cut off at the internal os, and the cervix sewed over and over and covered with peritoneum, as in Case No. I. No drainage. In this case nothing but catgut was used within the peritoneal cavity.

Convalescence: For twenty-four hours her condition was perfectly satisfactory. Suddenly her pulse shot up to 120 and 130; and in spite of all we could do she died on the third day.

Autopsy: No distention of the abdomen. Very little fluid within the abdominal cavity. No blood. Stumps looked healthy. No flakes of lymph. No evidences of peritonitis.

Discharged May 17th. Dead.

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RAPID INCREASE OF OPACITY IN SENILE CATARACTS.

BY F. W. ELLIS, M.D., MONSON, MASS.

Senile cataracts, as a rule, develop very slowly. The opacity may increase almost imperceptibly from month to month, but it is never safe to predict what the course of the disease will be. Many of the standard text-books of ophthalmology mention the impossibility of an accurate forecast of events in the development of a cataract, and state that a cataractous lens, which has remained comparatively clear for a long time, may become completely opaque in a few months, or even weeks. The possibility of such an occurrence should always be borne in mind in making a prognosis.

It may not be so generally known that the time requisite for rendering an incomplete cataract entirely opaque may be extremely short — much less, in fact, than the few weeks frequently stated as the extreme limit. I do not remember ever having seen any statement in ophthalmological literature to this effect, but my own limited experience has demonstrated that it is possible for a cataractous lens still permitting a very considerable amount of vision to become entirely opaque, without any obvious cause, in a very few *days*. It does not seem likely that the masters of our profession have not noted similar occurrences in their vast experience, but it is singular that treatises on eye diseases are universally silent upon this point. It may be profitable to mention a few cases that have presented themselves to me in my practice, which have more or less interest in this connection.

In October, 1890, I was consulted by a gentleman sixty-six years of age. I found that the vision of his right eye was $\frac{4}{\mathrm{c}}$, and that of his left $\frac{20}{\mathrm{LXX}}$. The right eye contained a well-advanced cataract, and the lens of the other showed traces of the same disease. I saw the patient at intervals after that, but made no record of his condition until April, 1894. The patient had been able to get about alone, and could read and write with difficulty. He noticed one day in the latter part of April that his vision was rapidly failing. He came to my office in great alarm. I found with the ophthalmoscope that the opacity had greatly increased, although I could still obtain a slight reflex from the fundus. A day or two later the lens became greatly swollen and entirely opaque, and the patient was led about the streets almost entirely blind. He was deeply sensible of his affliction as he had been able to read a letter only a few days before. No cause for the sudden change in the condition of the left eye could be discovered. As the cataract in the right eye was fully ripe, I removed it a few days later, with excellent resultant vision. I have not yet operated upon the left eye, as the patient is well satisfied with his present vision. If he consents to the operation, I shall be greatly interested in its result. In this case there was no chance for error, as the patient was wholly dependent upon his left eye for vision, and was consequently able to note almost the moment when the remarkable change in its lens began.

While treating the patient whose record I have just given, I was consulted by a lady, aged sixty-eight, whose lenses showed the commencement of cataract. A few months later, I found a large, swollen cataract in the right eye. The condition of the left eye had not greatly changed. The right lens was completely opaque, and the anterior chamber very shallow. The patient asserted that the change in her eye took place very suddenly, but, as she still possessed considerable vision in her other eye, it is obviously impossible to indicate with the certainty of the preceding case the time when the lens became completely cataractous. There is little doubt that the change was very abrupt. As in the preceding case there was no apparent cause for the occurrence. The condition of the left eye had not greatly changed. I removed the cataract by simple extraction, last May, and a few weeks later her vision was $\frac{20}{L}$.

June 1, 1895, I extracted a large, very opaque cataract from the right eye of a woman aged fifty-seven. The result was most excellent, but could not be accurately recorded, as the patient could not read. The left eye had been destroyed by small-pox when the patient was a child. It was stated that the vision had been considerably impaired for a long time, but was suddenly lost about five months previously. Up to that time, the patient had been able to do her work at home, but in a day or two she was unable to move about without assistance, and rapidly became entirely blind. As the patient had but one eye, there could be no mistake as to the time when the great change in the transparency of the lens took place.

Although the two last cases are not so remarkable as the first, they are nevertheless significant. In all the cases there was a large, swollen lens, and a shallow anterior chamber. In each there was a sudden loss of vision in the affected eye. In the two instances in which the cataracts were removed the fundi were found normal.

Although we may not have data enough for profitable speculation as to the causes of these remarkable changes in senile cataracts, it may be allowable to consider the possibility of a rupture of the capsule of the lens at some point, due to the pathological process. Although we have no proof of such an occurrence in these cases, such an accident would serve very well to explain their peculiar features.

I have ventured to call the attention of readers of the Journal to this subject in order that more careful attention may be given to the study of cases of the character I have described.

A Japanese Surgeon Honored by the Emperor of China. — The surgeon to the Mikado, who dressed the wound of Li-Hung-Chang after the attack made upon the Chinese plenipotentiary at Simonoseki, has at Li's request had the Order of the Double Dragon, Third Civil Class, conferred upon him by the Emperor of China.

AN UNUSUAL CASE OF AORTIC REGURGITATION.

BY HERMAN F. VICKERY, M.D.,
Instructor in Clinical Medicine, Harvard University.

On February 18, 1895, I had the honor of exhibiting to the Boston Society for Medical Improvement a patient who had presented himself in my service at the Massachusetts General Hospital, three days before, with a rather remarkable story and interesting physical signs.

The man is forty years old, large and well-built. He was a seaman till twelve years ago, when he took to railroad work and mining, being employed sometimes at one and sometimes at the other. He was working in a mine when he became ill. His habits as to liquor had been very moderate. He once had gonorrhea, but he denies other venereal disease. Five years ago, he was ill with rheumatism in the shoulders, accompanied by some local tenderness and swelling. This kept him in bed one week and interrupted his work for three weeks. Otherwise he enjoyed good health till one week before the onset of his present illness. During that week, he felt drowsy and languid; yet he kept at work. The night before the attack, he went to bed feeling pretty well, and he did not notice anything peculiar about himself. The next morning his companion in the hut waked him up to ask him what the matter was. He answered that nothing was wrong; but his friend insisted that there was a noise to be heard inside of him, as if a blood-vessel had given way. Then he listened, and he also could hear it. On further investigation by him and his friends, it was found that this sound could be heard at a distance of eight feet. Since then, shortness of breath has prevented his doing any work. The dyspnea was greater the first three months than since. The event occurred four months before I saw him.

On examination there were found a water-hammer pulse, a pistol-shot sound in the arteries, a beautiful capillary pulse in the lips and in the nails, and an aortic regurgitant murmur with peculiarities about to be described. The heart was hypertrophied, with its apex in the sixth space and slightly displaced to the left. Over the aortic valve there was a loud diastolic murmur, which could be heard not only there, but two inches from the man without touching him at all, and over his entire body: the thorax and abdomen; the neck, up to the level of the ears; in front of the ears; at the angle of the jaw; the occiput; the upper part of the humeri; the outer part and top of the shoulders; and downwards to the crest of the iliac bones, back and front.

It is interesting to note that while the murmur was audible over the humerus it was not to be detected over the brachial artery. It seemed to be conducted by the bony skeleton and the muscles rather than by the blood-vessels; which conclusion other observers have arrived at in similar cases.

Of course, what had happened to this man was the sudden rupture of an already diseased aortic valve.

Gifts to the Medical Department of Yale University.— In the report of the Treasurer of Yale University it is stated that gifts to the Medical Department during the past year amounted to $2,600, of which $1,800 was given by Mrs. H. Farnam.

A CASE OF FATAL DIARRHEA (CHOLERA) DUE TO ASCARIDES.

BY N. C. MITRA, M.A., M.B., RANCHI, BENGAL, INDIA.

It is something unusual that ascarides would set up fatal diarrhea. Many nervous complaints have been found associated with the presence of these worms; but I have not had occasion to come across a case as noted below. Considering the rarity of such complaints, I believe it would be of some interest to the reader to peruse notes of such a case.

I may mention, in passing, that this place is notorious for affections of round worms. Children are specially subject to them. And it is after the rains in August and September that the affection is most prevalent.

The patient, a child ten years of age, was sent to the local municipal hospital for treatment of diarrhea. The patient looked very ill. The eyes were sunken, the pulse small and thready, the face shrunken and anxious. On inquiry I learned that she had passed that morning four or five watery motions, and along with her motions, one big round worm. Had it not been for the presence of this worm, I would have treated it as a case of diarrhea. But this single worm pointed to no other conclusion than that this diarrhea was set up by worms. Acting on this diagnosis, I gave her one two-grain powder of santonine, and in addition, a stimulant mixture to brace her up. Next morning she passed two worms. The medicine was continued, and she passed the following day nine worms, the day after nine worms, next day 28 worms, then 31, till in eight days she passed 111 worms. The diarrhea was kept under control by suitable astringents; but she gradually got worse, and died a week later.

Considering the number of worms passed, namely, 111, it is no wonder that these set up an irritation which brought on the fatal diarrhea.

Whether the diarrhea was due to quite a distinct cause and that the worms did not contribute to the affection are questions which I leave to the decision of the reader. But I am always of the opinion that this diarrhea of the patient was brought on by the presence of these worms. It would be a wonder if such an enormous number of worms would not set up nervous irritation of the bowels resulting in such an acute diarrhea as detailed above. And the death can properly be attributed to severe nervous exhaustion which ended fatally.

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Medical Progress.

RECENT PROGRESS IN GENITO-URINARY SURGERY.

BY F. S. WATSON, M.D.

DOUBLE CASTRATION FOR HYPERTROPHY OF THE PROSTATE.

An especially notable article is that of White, of Philadelphia,[1] of the experience up to date from reliable sources of the results of double castration for hypertrophy of the prostate. This is prefaced by a short discussion as to the causation of the disease, and followed by an experimental study and summary of the evidence in regard to the effects of (*a*) unilateral castration, (*b*) ligation of the vas, (*c*) ligation of the spermatic and deferential arteries, (*d*) ligation of the entire cord.

The conclusions reached by White are as follows:

(1) The function of the testis, like that of the ovary, is twofold — reproduction of the species, and the development and preservation of the secondary sexual characteristics of the individual. The need for the exercise of the latter function ceases when full adult life is reached; but it is possible that the activity of the testis and ovary in this respect does not disappear coincidently, and that hypertrophies in closely-allied organs like the prostate and uterus are the result of this misdirected energy. This hypothesis would increase the analogy between the fibro-myomata of the uterus and the adeno-fibromata of the prostate, which, from a clinical standpoint, is already very striking, and is further strengthened by the almost identical results of castration in the two conditions.

(2) The theoretical objections which have been urged against the operation of double castration have been fully negatived by clinical experience, which shows that in a very large proportion of cases (87.2 per cent.) rapid atrophy of the prostatic enlargement follows the operation, and that disappearance or great lessening in degree of long-standing cystitis (52 per cent.), more or less return of vesical contractility (66 per cent.), amelioration of the most troublesome symptoms (83 per cent.), and the return to local conditions not very far removed from normal (46.4 per cent.), may be expected in a considerable number of cases.

(3) The deaths have been 20 in 111 cases (18 per cent.). (White excludes 13 of these deaths as due to the operation, and we think with justice.) This would leave a mortality of 7.1 per cent.

(4) Comparison with other operative procedures seems to justify the statement that castration offers a better prospect of permanent return to nearly normal conditions than does any other method of treatment.

(5) The evidence as to unilateral castration is at present contradictory, but there can be no doubt that in some cases it is followed by unilateral atrophy of the prostate, and in two cases at least it has resulted in a very marked improvement of symptoms.

(6) My experiments on dogs have shown in nearly every case in which the vas deferens was tied or divided on both sides, that without much change in the testicles there were beginning atrophy and considerable loss of weight of the prostate.

(7) Ligation of the vascular constituents of the cord or of the whole cord produces atrophy of the prostate, but in my experiments only after causing disorganization of the testis.

A table of the cases is appended to this very interesting article of White's.

MOVABLE KIDNEY.

Albarran[2] presents the most important paper published up to this time upon the subject. He notes, in the first place, that the symptoms bear no definite relation to the degree of mobility of the organ. Some patients exhibiting the most serious conditions with a kidney but slightly movable, whilst others experience almost no discomfort with a kidney that is really floating.

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[1] Annals of Surgery, July, 1895.

[2] Annals des Maladies des Org. Gen.-urin, July and August, 1895.

The symptoms may be classified under three principal headings:

I. Pain.

II. Nervous symptoms.

III. Digestive disturbances.

These are frequently associated in the same individual; sometimes simultaneously, at other times in alternation.

Pain. — This varies from a slight feeling of discomfort in the hypochondrium, more marked after muscular exertion, to almost constant pain, which incapacitates the patients or may confine them to bed. Or, again, it may occur in paroxysms of great intensity and variable duration. The pain frequently resembles that of nephritic colic. Reflex disturbances, such as vomiting and considerable prostration, are sometimes associated with these attacks, which have then been called strangulation of the kidney.

The author then refers to the various theories which have been advanced to explain these attacks of pain, such as dragging upon the nerve plexus, constriction of the blood-vessels of the kidney or of the ureter. In support of the latter Albarran speaks of one of his own cases in which he discovered, upon operating, a twist of the ureter due to retroversion of the kidney. It is well established that the attacks of intermittent hydro-nephrosis which occur in movable kidneys are due to a twist of the ureter.

Albarran believes that the greater part of the pain, and especially of the crisis of pain, in these cases are referable either to a twist or to compression of the ureter. He quotes Sinitzine's case, who could produce such attacks in a patient with exstrophy of the bladder by compressing the orifice of one of the ureters. In one of the author's cases, occasion arose to place two catheters *à demeure* in the ureters. Whenever the mouth of either of the catheters was closed the patient experienced pain just as violent as that which occurs in strangulation of the kidney, and the pain immediately disappeared if the closed catheter was removed.

The author explains the great variation in different individuals in respect to the degree of pain by supposing that in the cases in which the pain is but slight, the ureter as well as the kidney is movable, and consequently there is no twist or compression of it, and only the pain due to the dragging of the nerve plexus on the kidney is present. If, on the contrary, when the kidney moves the ureter remains relatively fixed, compression or twist does occur, and there follows the more intense pain due to the acute retention of urine in the kidney.

Nervous Symptoms. — These are extremely variable, ranging from slight disturbances to pronounced neurasthenia or hysteria. They resemble closely those exhibited by women who have affections of the genital organs. It is notably common, moreover, to find some lesion of the uterus or its appendages associated with lesion of the kidney. Some writers maintain that afflictions of the uterus and tubes are due to movable kidney while others consider the converse of this to be true. The author takes the view that it is simply coincidence, both lesions being of common occurrence. The complete picture of hysteria is often associated with movable kidney. Albarran considers movable kidney to be a sign of degeneration, and cites eight or ten cases in his own experience in which the patients were well-marked mental degenerates.

Digestive Disturbances. — These are very frequent, and are referred by the author to mechanical compression of the intestine by the displaced kidney, or to dragging of the duodenum; secondly, to reflex nervous action; thirdly, to enteroptosis associated with movable kidney.

The digestive disturbances are in the form of a tonic dyspepsia with constipation and dilatation of the stomach, or sometimes they occur as neuralgic pains in the stomach, watery eructations or attacks of vomiting.

Alberran considers that the relaxation of the abdominal walls (enteroptoses) has but little to do with causing movable kidney, a great many patients who have the affection having firm abdominal walls.

The three local conditions accompanying movable kidney are hydro-nephrosis, pyelo-nephritis, pyonephrosis.

Treatment. — The intermittent hydro-nephrosis already referred to, yields the most excellent results to nephrorrhaphy. The four methods of treatment are mentioned as being massage, apparatuses for retaining the kidney in position, nephrectomy and nephrorrhaphy. Nephrectomy is rejected by every one. Massage, advocated by Kumpf, may be of service in giving tonicity to relaxed abdominal walls but no further. Operation should never be attempted until apparatus to retain the kidney in position has been tried and has failed.

The gravity of movable kidney is undoubted. The operation of nephrorraphy is a very safe one and in its results has been wholly successful, that is to say, has caused disappearance of all symptoms in 88 per cent. of the cases collected by the author up to the present time.

The operation should not be undertaken during an attack of kidney strangulation. The kidney may usually be returned to its normal position by raising the pelvis as in the position of Trendelenburg. If the acute attack should persist and threaten serious danger to the patient in spite of all attempts at replacing the kidney, the operation must be undertaken without undue delay. In cases where hysterical symptoms are well-marked, operation should be delayed as long as possible, and should only be resorted to when the resources of apparatus for retaining the kidney in position have been wholly exhausted.

Albarran's paper offers a very hopeful outlook for the operation of nephrorraphy if due care is exercised in selecting cases for its application.

The article contains a valuable *résumé* of the operative experience up to the present time, including many of the author's cases as well as descriptions of the technique of the different methods by which nephrorraphy has been practised, and it is deserving of careful study.

EXPERIMENTAL REMOVAL OF PORTIONS OF THE KIDNEY.

Dr. J. R. Bradford[3] states that the object of these experiments was to investigate the changes in the urine and in the general nutrition that occurred when an animal had but a fraction of one kidney available for the discharge of the renal functions. The experiments were carried out on dogs, the ingesta and excreta being determined before and after the operation. The nitrogen was determined by Kjeldtal's method. A wedge-shaped portion was excised from the middle zone of one kidney and the cut surfaces approximated by sutures. After an interval of some weeks the entire opposite kidney was excised. The results may be summarized at follows:

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[3] Lancet, May 11, 1895, page 1185.

Removal of a portion of one kidney is followed by a variable amount of general atrophy of that kidney and by hypertrophy of the opposite kidney, provided the operation be performed in adult animals. Removal of a portion of one kidney only, is followed by a slight increase in the amount of urine excreted. This increase is sometimes only temporary, and there are no other ill effects. If after having excised a portion of one kidney the entire kidney of the opposite side be removed, varying results are seen. If only some two-thirds of the total kidney weight has been removed altogether at the two operations, the animal remains in fair health and does not emaciate. The quantity of urine excreted, however, is greatly increased, that is, doubled or trebled in amount. There is no increased excretion of urea. On the other hand, if as much as three-quarters of the total kidney weight has been removed, then there is a still greater increase in the amount of urine excreted and in addition there is a considerable increase in the daily urea excretion; the animal emaciates rapidly, and dies within a few weeks of the second operation. Excision of a wedge from each kidney is followed by the excretion of a large amount of urine, but there is no increased excretion of urea and the animal remains in good health. Hence, when the renal tissue is reduced to but one-fourth of its original weight, there is not only no diminution in the amount of urine and urea excreted, but, on the contrary, a great increase, the increase in them being dependent upon rapid emaciation, which is not checked by a liberal diet.

TUBERCULOSIS OF THE GENITO-URINARY ORGANS.

A short account is given by Trendelenburg[4] of three operations undertaken at different times upon a girl twenty-two years of age, on account of tuberculosis of the genito-urinary organs: first, extirpation of the urethra and a portion of the bladder; second, removal of one kidney, and third, extirpation of the rest of the bladder, with implantation of the ureter into the sigmoid flexure. The patient recovered. The urine at first could be held from two to four hours, later, however, for but a short time.

PRIMARY CANCER OF THE URETHRA.

Albarran[5] reports a case of the above. The patient, forty-four years of age, had never had gonorrhea nor suffered any injury, but had suffered since four years of age from difficulty in urination. Ten months before cancerous symptoms were noticed, a fistula spontaneously formed upon the upper surface of the urethra toward the base of the penis. A large swelling shortly afterwards appeared and extended over the scrotum, upon the surface of which several other fistulæ formed, through which almost all the urine was evacuated. The case proved to be one of primary carcinoma of the urethra.

Total emasculation and extirpation of the inguinal glands was practised in Albarran's case, and was followed by recovery, which up to the time of writing had been maintained three months.

Cabot reports[6] another similar case. The patient was an elderly man who had experienced difficulty in passing water a year before. Nine weeks previous to the first observation, a painful swelling appeared in the perineum. A fortnight later this was incised and pus was evacuated. A fistulous tract persisted, and the swelling did not disappear, but on the contrary enlarged. Another fistulous opening appeared upon its surface. All the urine was passed through these fistulæ. A small portion of the growth was examined microscopically, and found to be cancerous; its cells were small and cylindrical, and its urethral origin was evident.

Cabot refers to five other cases reported by F. Tilden Brown, New York, namely, those of Schustler, Thiersch, Guyon, Tyzebicky and Geriard. These with Alberran's and Oberländer's are the only cases reported up to the present time.

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

NINETEENTH ANNUAL MEETING, WINDSOR HOTEL, MONTREAL, CAN., SEPTEMBER 17-19, 1895.

(Continued from No. 22, page 550.)

THE EPITRICHIAL LAYER OF THE EPIDERMIS AND ITS RELATIONSHIP TO ICHTHYOSIS CONGENITA,

by DR. J. T. BOWEN, of Boston, Mass.

Attention was called to a well-marked layer of cells in the epiderm of embryos forming a distinct membrane covering the hairs in certain lower animals. In man this layer has not received recognition. The reader's attention had been directed to the subject by the observation of Dr. C. S. Minot that certain shreds of fetal skin contained a layer of large polygonal cells, with a granular body in the centre, and within this, a nucleolus. He thought these cells a part of the epitrichial layer described by Melcker in 1864, and since forgotten.

The reader of the paper has found that in embryos of from two to three months, the epidermis has an outermost layer of large nucleated polygonal cells of peculiar shape. In the sixth month this layer has disappeared over most parts of the body. The resemblance of this layer of cells to the epitrichium covering the hairs and the epitrichial layer of certain animals makes the author conclude that they are homologous structures.

A case was related of a child born with a thin, perfectly smooth membrane covering it and closely adherent, suggesting a paraffine paper envelope. This layer began to peel off after five weeks in large strips leaving normal-looking skin. There were no fissures as in ichthyosis; this condition seemed to be due to the persistence of the epitrichial layer, and the author believes that similar cases reported by Hallopeau, Grass and Török belong to the same category. Instead of gradually exfoliating, and disappearing by the seventh fetal month the epitrichial layer retains its integrity. The true horny layer underneath desquamates in small scales after the covering has been removed.

DR. WHITE: Referring to the desquamation of the early formed hairs which takes place in utero, he wished to know from Dr. Bowen if he had noticed whether or not they were connected with this epitrichial layer, or whether they penetrated deeper and were a part of the composition of the fetus. Relative to the disease ichthyosis as illustrated by the plate of Hebra, the latter authority regarded it as a practically fatal disease, although he had known cases to recover. It was quite evident that he regarded the condition thus depicted as something far more serious than this adult desquamation.

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[4] Centralblatt für die Krankheiten der Harn-und Sexual-Organe, August 31, 1895, page 385.

[5] Annals des Maladies des Org. gén-urin., Mai, 1895, s. 447.

[6] Boston Medical and Surgical Journal, September 26, 1895.

Dr. Shepherd: This paper showed the importance of the study of embryology. Many of the anomalies which occur are easily explained by the theory of persistence of a fetal condition. It seemed to him that the reader's theory was a very correct one.

Dr. Bowen, in answer to Dr. White, said that in the animals experimented upon, the hairs were all underneath the epitrichial membrane which was situated outside them. In man the hairs did not appear until after this membrane was lost, at least not to any extent. In regard to Hebra's case, he did not wish to be dogmatic; he only said it resembled such a case.

A UNIQUE CASE OF AGMINATE FOLLICULITIS OF PARASITIC ORIGIN,

by Dr. M. B. Hartzell, of Philadelphia.

A man of thirty-two presented two varieties of lesions on the leg, belonging to some morbid process: an oval, elevated patch, covered with scanty crusts over a bright red, uneven, granular surface; smaller patches, closely examined, were seen to be made up of swollen and inflamed hair follicles. There were also pin-head to pea-sized pustules in groups and singly. The primary lesions were pustular and increased the patch by appearing at the periphery. Some furuncles formed. Examined portions showed a small cavity surrounding the hair in the upper part of the epidermis, a few spaces and mycelial threads. The rete was thickened, the follicles were enlarged and distorted. In some sections were grape-like clusters of spires attached to mycelium. The fungus presented larger elements than are usually seen in tinea circinata. Under sulphur improvement began at once, but the disease had existed for about ten months, incapacitating the patient for about half the time. Contact with animals as a source of infection could not be made out. The author believes that the agminate folliculitis of authors is most probably a deep trichophytosis such as here described. Particular attention is called to the Biondi-Haiden hair stain as applicable for the trichophyton. The case illustrates that the trichophytosis may cause extensive painful disease in other locations than upon the hairy parts.

Dr. Wigglesworth wished to ask Dr. Hartzell whether he considered there was any relation as to the extent and severity of the lesion and the source from which it was derived, whether from the horse or some smaller animal.

Dr. White thought we recognized how deeply into the skin some forms of bouton can penetrate in seeing kerion, a much more common type of this affection than the agminate forms. It was on the scalp and not on face that he had seen these agminate forms penetrate so deeply. We do see, however, in favus that this plant is capable of penetrating through the tissues of the skin even down to periosteum, and produce changes there. It would seem, therefore, that both these forms of vegetable parasitic affections were capable of going down to great depths, whereas in versicolor and airasma penetration is always confined to the upper part of the epithelial layer.

Dr. Elliot mentioned that in the mycelium of Dr. Hodson the fungus penetrated very deeply.

Dr. Hyde said that in connection with the question of Dr. Wigglesworth he was certain that in certain soils the parasite flourished better than in others, and that contagion from favorable sources was most likely to be severe. However, this is a ground on which the speaker could only conjecture. He had seen a couple of cases of exceedingly severe trichophyton derived from sheep in sheep-shearing cases brought a long distance from the city; and in these cases it has always taken the form of sycosis. He had never seen this severe form of trichophyton to which he now refers developed on the scalp; but in one instance he saw it well marked on the non-hairy part of the skin. Referring to the remarks in (re airasma?) he was a little bit surprised that this disease is not more frequently diagnosed. In one of his cases the signs were developed on the surface of the chest and belly, places where disease is not often seen.

Dr. Fox objected to the title of the paper, and thought the case ought to have been reported as a unique case of trichophytosis, as the present name gave one the idea that it was something apart from, instead of a peculiar form of, the latter disease. Most of them had seen these peculiar forms of trichophytosis which occasionally develop these small follicular patches; and it is possible the same condition might take place upon hair of a dog.

Dr. Sherwell, at former meetings, had spoken of the ravages of trichophyton in lower animals. He thought scratching had something to do with the implication of tissues. He often wondered if a parasite could penetrate tissues in a natural way without the assistance of scratching, and whether it could really live lower than the epithelial layer in the natural condition of skin.

Dr. Robinson, many years ago, wrote a paper on this fungus, which article was first to set forth the claim of a parasite being able to penetrate into the tissue.

Dr. Hartzell, in answer to Dr. Wigglesworth, said he believed the severity of the disease was determined to a very considerable extent by the variety of the plant, but much more upon the character of the sore. The fungus, he thought, grew much more luxuriously in deep cases than upon the surface, and the elements were larger than in the superficial varieties. In this case there was a double infection, and he believed that to a certain extent there was an antagonism between the staphylococcus and the trichophyton. The fungus did not grow well in the pustules; but was found deep down where there were no pus cells. This was an uncommon case. We are all familiar with deep trichophytosis as it appears on the scalp and beard; but this is a different thing. He would like to hear as to identity or non-identity of this disease with the agminate folliculitis of the French. He gave it the name he did because of its clinical features rather than on account of its etiology; it did not resemble the ordinary ring-worm. He had already mentioned the fact that he thought there were staphylococci in the pustules.

A CONTRIBUTION TO THE STUDY OF MYCETOMA,

by DR. J. N. HYDE, of Chicago, Ill.

The patient described was born in America, of Bohemian parents, and had never travelled out of his native State. The disorder began thirteen years ago at the age of seven. He was in the habit of wading in the river near his home in Iowa. A hard nodule first appeared within the skin of the foot sole, and gradually spread until the anterior third of the foot was extensively involved.

The diagnosis, tuberculosis and sarcoma had been made by various physicians. The feature was fungoid projections from irregular surfaces of infiltration. A central canal perforated the axis of each tubercle, often blocked by flabby granulation. Examination showed granulation tissue, with a considerable number of giant cells in the derma. Nothing resembling the "clubs" of other observers were found.

Madura foot is apparently a local disorder. The differences between the fungus of mycetoma and that of actinomycosis is that the latter grows readily in a hydrogen atmosphere, and the former with much greater slowness. They differ also in the rapidity with which they take up aniline stain. There is no agreement as to what constitutes the differences between the white, red and black varieties. In some cases where fish-roe-like particles have been surgically evacuated from sinuses existing in unquestioned subjects of madura foot, no fistulous tracts have opened externally to the outer surface of the skin.

The author concludes that there are clinical symptoms of mycetoma which are to be recognized in some cases and not in others. Unquestioned instances are on record where none of the usual features were exhibited. The constant symptoms are practically reduced to a characteristic deformity of the affected part, predominately the foot, but also the hand, knee, and a few other regions. There is a history of slow involvement of tissues. There is a notable absence of pain and of complicating accidents, such as erysipelas, eczema, etc.

Separate vegetable fungi appear in granulation or necrotic tissue with a number of unusually large giant cells which seem to be exercising a phagocytic effect upon the intruder. In a well-marked case there is usually a central body made up of semilunar or reniform bodies traversed by a network of mycelium.

There are clinical symptoms of mycetoma which are to be recognized in some forms and not in others. These may be termed non-essential features of the malady. They are (*a*) the appearance of blackish or reddish granules of pigment free and within the cells furnished by the secretion; (*b*) the discovery of particles resembling the roe of fish, either expelled from the sinuses or imprisoned within the unbroken surface of the skin; (*c*) the occurrence of sinuses leading from without inward as far as a muscle, tendon or blood-vessel. Cases of unquestioned mycetoma are on record where none of these features are exhibited.

DR. GRAHAM was much interested in the case, especially as Dr. Adami, of McGill University of Montreal, had shown a case of "madura foot" at a recent meeting of American physicians held in Washington. Prof. Adami made a minute study of pathological features; the speaker did not know the clinical features. Patient was a Canadian—had never lived out of Canada; he lived near a river, and he gave a history of exposure.

DR. ELLIOT wished to know whether Dr. Hyde made an absolute distinction between the fungus that caused madura foot, and that recognized as the cause of actinomycosis.

DR. HYDE said he was not justified in drawing a conclusion, so far, from his observations on this case. But from Indian observations, and his experience of this case combined, he was inclined to think that there were probably several varieties of the ray fungus, and that the variety causing madura foot was not identical with that causing actinomycosis. He thought there might be an American variety of the ray fungus which caused mycetoma.

DR. ELLIOT'S reason for asking was on account of a peculiar case of actinomycosis seen last winter. He had seen three cases of this disease, one case did not affect the jaw at all, but commenced primarily in the abdominal canal, a fistula ani being the first symptom. There was no doubt as to identity of the disease, as he had made a pathological examination and found the ray fungus abundant in the secretion.

His other two cases were typical ones affecting primarily the lower jaw, and extending from there. These cases of actinomycosis had a peculiar hardness about the wound or fistula, which has always been signalized as characteristic of actinomycosis. So far as he knew, this symptom was wanting in madura foot.

NOTES ON DRUG ERUPTIONS,

by DR. J. A. FORDYCE, of New York.

The speaker referred to the nodular form of iodic eruption, in a woman where the lesions reached the size of the fist, and were not to be looked upon as erythema nodosum. It is probable that all iodic eruptions are secondary to certain vascular changes, and this may account for the exaggerated lesions seen upon a paralyzed member.

Another case was of a rupia-like eruption due to the iodide of potassium but simulating syphilis, in a syphilitic subject. The lesion healed under boric-acid ointment. A second case of similar nature showed ulcerations, which healed when the iodides were stopped. The lesions in both cases corresponded with the anthracoid variety of iodide eruptions. The cases would seem to show that the skin in some persons reacts to iodide, and in much the same manner as to the syphilitic process.

A colored plate was shown of an erythematous rash covering the whole central portion of the body as a diffuse, and the other parts as a scattered, eruption following the use of mercurial ointment.

Another case similarly produced was one of erythema scarlatiniforme which had been taken for scarlet fever.

The last case was one of erythematous eruption from the internal use of boric acid given in thirty-grain daily doses for a month. A multiform erythema of the trunk and a swelling of the upper lids were present. There was also inflammation of the conjunctiva. On stopping the boric acid the symptoms disappeared. Other cases have been reported from this cause, but the author has seen no mention of the hard edema of the eyelids seen in his case.

DR. JACKSON was called a few months ago, in consultation, to a case supposed to be scarlatina. The patient had been sick several days when he saw him. It commenced in the form of a little irritation about his genital region; a doctor called and perscribed blue ointment; then these erythematous rashes began to spread until they involved a large portion of the surface. The doctor's diagnosis was scarlet fever, and as such it was reported to the board of health. Dr. Jackson being then called in, found the patient without fever, without any of the other clinical signs of scarlet fever, except the rash, and decided then that it was a scarlatiniforme rash from mercurial ointment.

DR. WHITE had occasionally observed that the use of stimulating applications to the skin was capable of lighting up widely spread dermatic conditions. He had seen two instances of boric-acid eruptions, which made him take a special interest in those reported here; he thinks not many such are to be found in books.

DR. KLOTZ had seen an erythema developed after general inunctions of the body for syphilis. He had recently seen a case of fatal poisoning following the use of boric acid, which is generally considered an innocent drug. He had seen a dermatitis occur after the prolonged use of small doses. In the fatal case, death was due to an acute desquamative nephritis, the result of its irritative effect on the kidneys. He thought there was some doubt whether death was due to the poison or to the kidney trouble.

A REMARKABLE DRUG ERUPTION,

by **DR. F. J. SHEPHERD**, of Montreal.

A patient in the Montreal General Hospital, suffering from a swelling of the knees due to acute synovitis, was given three twenty-grain doses of salicylate of sodium when an urticaria-like eruption appeared and soon became petechial. These lesions were followed by deep sloughing, leaving ulcerations slow to heal. The upper portion of the body, especially the region of the shoulders, was mostly affected. There was also an eruption in the pharynx and larynx leading to edema and alarming symptoms. The eruption disappeared only after thirty days. In some instances the whole spot became dark from infiltrated blood, and at times the whole body was covered with coffee-colored spots; some disappeared, going through the various color stages of a bruise. Local gangrene occurred, especially over the shoulders, but also in the mouth and pharynx. About the shoulders gangrenous areas, ranging in size from a fifty-cent piece to that of the palm, were seen. (These were all shown in photographs.) During the separation of the sloughs there was a rise of from two to three degrees of temperature.

The patient was presented at the meeting, and showed extensive red cicatrices in the regions where sloughing had taken place. A small ulcer on the right arm still remained.

DR. ELLIOT thought the cause was the administration of sodium salicylate, and did not think the manifestations were peliosis rheumatica.

DR. BRONSON thought it an interesting as well as puzzling case. He thought the diagnosis should be a composite one, partly peliosis rheumatica modified by the use of the drug, salicylate of soda. Peliosis rheumatica never, as far as he knew, caused gangrene, although the hemorrhage might be accounted for.

DR. WHITE said one might think of three affections in connection with these symptoms:

(1) Peliosis rheumatica, but the distribution and outcome of the disease are entirely at variance with that affection.

(2) Drug eruptions. As these have no bounds set to them, and our knowledge of them is at present very limited, it would be no way warrantable to conclude that it might be a manifestation of salicylic-acid poisoning.

(3) The next affection to be considered is a rare hemorrhagic form of dermatitis, dermatitis multiformis or herpitiformis. The early urticarial nature of the lesion, the vesicular, bullous, and hemorrhages are all within the limits of this affection. The only objections against it are the gangrenous and necrotic condition at the end of the process. Were it not for the symptoms of synovitis, etc., preceding the exhibition of the drug, he should have been inclined to favor the drug as a cause of the eruption.

DR. MORROW believed patient's skin had a very marked urticarial reaction, and he had no hesitation in attributing the lesion to the action of the drug.

DR. ALLEN had seen some severe cases of eruption after salicylates in rheumatic patients, but never anything equal to this. Still he could hardly doubt the causal action of the drug.

DR. MORROW: Drug eruptions were caused by two conditions: (1) a certain receptivity of the system which may be acquired or created by pathological phenomena; (2) Idiosyncrasy. The first may have been present at the time the drug was first given, and absent now or on a subsequent occasion. He did not, therefore, think that even if it were found the man could take the salicylates now with impunity, it would prove that the drug had nothing to do with causing the eruption in the first instance.

DR. SHEPHERD only began to doubt the sodium salicylate as a cause, when he noticed crops of the eruption continuing to appear after the stoppage of the drug. Then the eruption was preceded by the rheumatic pains. Then the duration seemed to be incompatible with such small doses of the drug as had been given (only four doses amounting to eighty grains). Hutchison reported a case of purpura thrombica which resembled this one.

(*To be continued.*)

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Recent Literature.

Pediatrics. The Hygienic and Medicinal Treatment of Children. By THOMAS MORGAN ROTCH, M.D., Professor of the Diseases of Children, Harvard University. Philadelphia: J. B. Lippincott Co., 1896.

The book is well printed, and contains a larger number of pictures than any other work on the same subject. Most of these are very fine, but some of them seem rather unnecessary. The colored plates are much above the average. The blood plate and those of vaccinia and of the throat, as well as that showing the napkins, are especially good. The numerous tables and diagrams will prove of great value to the student. The arrangement is original, and on the whole very satisfactory. We are glad to find typhoid where it belongs, among diseases of the gastro-enteric tract, but fail to see why vaccinia should be included in the chapter on the hygiene of the nursery. Dr. Rotch has not only made a new departure in writing in the first person, but has shown that, in his hands at least, it is forcible and well adapted for a text-book. The pathology is concise, up to date, and amply sufficient for a work which is intended to be mainly clinical. The clinical manifestations of disease are everywhere described very fully, and illustrative cases are abundant. The supreme importance of nursing and feeding in the treatment of disease in children is everywhere emphasized. Treatment by drugs is always simple and occupies a very subordinate position. We feel, however, that the author, in his anxiety to avoid useless and harmful remedies, has gone too far and not allowed drugs the place which they deserve. As would be expected from Dr. Rotch's previous work, the sections on development, feeding, and the diseases of the gastro-enteric tract are exceptionally full and complete.

The chapters on the infant at term and on normal development are full, in many respects original, and of great value for reference. Dane's work on the foot is of especial interest, but requires verification. We are glad to see that Dr. Rotch emphasizes the danger of nasal obstruction in young infants.

Too much cannot be said in praise of the article on feeding. It contains the results of years of original and careful work on infant feeding and is the latest and most complete exposition of Dr. Rotch's well-known views on this subject. How much we owe him for providing us with a rational method of feeding babies and for introducing the laboratories where this method can be accurately and scientifically carried out can only be appreciated by those who have had the ability and opportunity to test it thoroughly. The tables for the home modification of milk will prove invaluable to those who do not live within reach of a laboratory and also to those to whom expense is an object.

We have not seen elsewhere so complete an article on premature infants.

The article on the blood is by far the most satisfactory which we have yet seen in English. It gives concisely and clearly practically all that is definitely known of the blood at the present time, and must prove of great value for reference. The position taken on the anemias is especially good, but the blood examinations given for pernicious anemia are certainly not convincing of the accuracy of the diagnosis. Nor can we agree with the statements regarding the leucocytosis of pneumonia. The lymphocytosis of typhoid is not mentioned and the estivo-autumnal parasite is hardly given due prominence. The list of references at the close of this article only makes us regret that the author has not similarly favored us elsewhere.

The chapters on the diseases of the new-born are on the whole fairly satisfactory when the obscurity of the subject is taken into consideration. The paragraphs on hemophilia hardly gives a true idea of the condition, however.

The chapters on the exanthemata are full and admit of nothing but favorable criticism. The description of the kidneys of scarlet fever is especially good.

In the chapters on the diseases of the nervous system the author has devoted himsef largely to the clinical side and has not attempted to go into pathological details. The descriptions of the symptoms and course of the various diseases and conditions are full and accurate and the illustrative cases very instructive. We feel, however, that a more careful explanation of the relationship of the symptoms to the pathological lesions would have made the subject clearer. The classification, as the author states, is merely a list of the different diseases and not founded on a purely pathological or symptomatic basis. We feel, nevertheless, that to classify diseases and symptoms of the same diseases together as if of equal importance, is irrational and likely to mislead. The important subject of reflex nervous disturbances in children is considered very fully and many interesting points are brought out. We are surprised to find that craniectomy is not mentioned in the treatment of microcephalus and feel that sufficient importance has not been attached to the lesions which convulsions may cause.

The chapter on diphtheria is free from all useless padding up to date, and yet conservative. We are extremely glad to see that the use of irritating applications to the throat, unfortunately too much employed in Boston heretofore, is discountenanced and the danger of excessive zeal in local treatment emphasized.

In the division on the diseases of the gastro-enteric tract we find the first systematic work based on the classification recently adopted by the American Pediatric Society. This classification is founded on the etiology of disease, which, in the present state of our knowledge concerning this very obscure class of diseases in early life, seems by far the most rational basis. Criticism on this division must largely depend on whether this classification is accepted or not. Although it is far from being entirely satisfactory, yet it is much better than anything we have had previously, and is founded on the lines in which progress will probably be made in the future. Clinically we have found it very useful and satisfactory. One of its great merits is that it avoids useless, unmeaning, and misleading terms. The unreliability of symptoms and the similarity of those arising from different pathological conditions, is everywhere recognized and the consequent difficulty of diagnosis pointed out. The rarity of the more serious pathological conditions in early childhood and the great importance of the nervous and functional disturbances is duly impressed. Feeding is rightly made of supreme importance in the treatment of these diseases, and drugs are placed in the extremely subordinate position which they should occupy. The pathological plates in this section surpass any which we have ever seen. On the whole we must consider this one of the strongest divisions of the book.

The division on the diseases of the respiratory organs is uniformly good; the article on broncho-pneumonia exceptionally so. We are glad to see that "capillary bronchitis" is conspicuous by its absence.

Considerable space is given to congenital diseases of the heart. The acute carditis of children, upon which Sturges laid so much stress, is not mentioned, however. Pericarditis is taken up at length and the author's original experiments, which led to his recommendation that the pericardium be tapped in the fifth right interspace, fully described. We feel that Dr. Rotch's work in this direction has not been so fully appreciated here as abroad, where Ebstein has recently confirmed his results. The unclassified diseases of the last division seem worthy of more detailed consideration although no important points have been omitted.

On the whole, it is the most satisfactory individual work on the Diseases of Children which has been published in English and is a credit to Boston and to Harvard University.

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DIAGNOSIS OF MALARIAL FEVERS BY ORGANISMS IN THE BLOOD.

IN a recent paper on "The Practical Value of Laveran's Discovery,"[1] Dr. Wm. Osler, of Baltimore, Professor in Johns Hopkins University, states that the medical profession has not yet fully realized "that the diagnosis of the malarial fevers can be made with certainty by the blood-examination."

From a study of the mortality statistics of the cities of the Atlantic sea-board, Dr. Osler points out that the mortality ascribed to malaria is far greater than his nine years' experience with accurately diagnosticated malaria shows it should be. This condition of things he believes to be due to inaccurate diagnosis and to the deeply-rooted tendency among medical men to consider all fatal cases of recurrent rigors, the causes of which are not clearly apparent, as of malarial origin, when with more probability they may be due to tuberculosis, typhoid fever or some other infectious process. Dr. Osler also takes the ground that it is high time that boards of health should refuse to accept the diagnosis of malaria as a cause of death without more definite evidence than is now required.

In view of these positive statements by such a distinguished and experienced observer, it is surprising to read a recent monograph from India, by one surgeon, Lieutenant-Colonel E. Lawrie, M.B., in which the existence of Laveran's parasite in malaria in general, and in the fevers of India in particular, is denied in the most positive terms. At this late day, after all the brilliant work of European and American investigators on the nature and life history of that organism, a general statement of this kind must be supported by a very convincing array of facts or be treated with contempt.

The monograph before us, at first glance, presents all the appearances of a first-class objective study of a fairly large number of cases of malarial fever in hospital practice, and therefore seems to merit more attention than a mere speculative essay. A careful perusal of the work, however, shows that as a contribution to the pathology of the blood in the Indian fevers it is worse than valueless, but that it has some utility as proving how necessary it is to have an elementary knowledge of microscopical technique before entering upon the study of the blood.

From Dr. Lawrie's descriptions it is clear that his methods of preparing blood for microscopical examination were ridiculously bad, in most of his cases, so that it would be impossible to make an adequate study of his preparations, while in other cases a peculiar mental bias, together with a lack of skill in using the microscope, render it certain that he could or would not recognize the *plasmodium malariæ* if it were before his eyes. This mental bias was apparently produced by indignation at certain remarks made by Dr. Ernest Hart in an address before the Indian Medical Congress of 1894, in which he pointed out that the profession in India had not begun to apply modern methods to the study of the interesting forms of remittent fever around them. These remarks of Dr. Hart are thus commented upon by Dr. Lawrie in his opening paragraphs: "Having diagnosed malarial fever, without difficulty, for many years by means of the temperature, the pulse, the tongue and the condition of the bowels, and the state of the spleen, its periodicity and its susceptibility to quinine, I confess that I was sceptical regarding the amount of assistance to be derived from the microscope in the diagnosis of malaria."

This reveals the attitude of mind in which the investigation was begun and carried out. The polemical tone of the publication is shown by that frequent use of the term "plasmodists" to indicate the large and increasing body of medical men who have become familiar with the appearances of the *plasmodium malariæ* in the blood, and from the use of such phrases as "burst the malarial bubble" and "we hereby challenge any plasmodist to demonstrate the existence in the blood of a living malarial parasite."

Pseudo-scientific papers, such as this one, containing the results of incompetent observation by a man of apparently high professional standing, do much harm by obstructing the progress of medical knowledge, for the general medical public to whom they are addressed cannot gauge them at their true value. We trust that this publication does not reflect the attitude of many of the profession in India; if it does, it offers a sad commentary on the condition of medical culture in that country.

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THE BURIED TENDON SUTURE.

AT the last meeting of the Southern Surgical and Gynecological Association, held in Washington, Dr. H. O. Marcy, of Boston, read an instructive paper upon the history of the buried animal suture, and the best methods for its preservation and use. Since Dr. Marcy was the first to suggest the employment of buried sutures and demonstrate their value, his contributions upon the subject are of more than ordinary importance. His first contribution upon the buried catgut suture was published in 1870. In 1880 he substituted tendon for catgut, as in every way superior, and in many articles has called the attention of the profession to the importance of its general adoption.

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[1] Medical News, November 23, 1895.

Dr. Marcy stated that the defect of catgut is inherent in its structure, and it cannot be rendered satisfactory by any method of preparation. "The connective tissue sheath of the intestine of the sheep from which catgut is manufactured has its ultimate fibres disposed in an oblique direction crossing diagonally. This serves the physiological purpose of foreshortening and distention as well as strength." The violin string (catgut of commerce) is not unlike a very thin piece of tissue silk which has been cut diagonally and then twisted. This would make a very imperfect fish-line, and the comparison is not overdrawn. When dry, the gut is strong; but when wet, it is flat, elastic, and slippery. Chromicizing only partially remedies this defect, and sterilization by any process cannot correct the damage which the intercellular cement substance has sustained from bacterial infection, and the maceration, to which, in preparation, the catgut is necessarily subjected.

Properly prepared tendon not only escapes these injuries, but has an entirely different ultimate structure. The connective-tissue cells are disposed parallel to each other and are the strongest structures of the animal economy. Of equal weight, carefully selected tendon will sustain a tension equal to that of silver wire. Tendons taken from the freshly-killed animal are quickly sun dried and kept dry until their final preparation. Soaked in a 1 to 1,000 mercuric solution until supple, the tendons are carefully cleaned, assorted, and dried between sterilized towels. They are then chromicized until of a dark golden-yellow color, and preserved in sterilized linseed oil to which one-tenth part of the crystals of carbolic acid has been added.

Sutures thus prepared improve with age. When desired for use they are soaked in a 1 to 1,000 solution of bichloride of mercury until supple. Preservation in absolute alcohol, boiling in it under pressure, boiling in kumol (oil of caraway seed) — indeed, preparation by any of the many methods suggested for the sterilization of catgut — serve only to injure the inherent structure of tendon, and are not to be commended.

The tendons from the tail of the smaller varieties of the kangaroo furnish by far the most valuable suture material yet found. The anatomical construction of the psoas muscles of the rat, squirrel, and the opossum is not unlike that of the kangaroo; each fasciculus having its independent tendon extending the entire length of the tail. The tendons of these smaller animals are too short and too fine for general use, those from the large kangaroo too large. The latter when sub-divided fray and are less valuable.

Dr. Marcy reported that from various sources kangaroo tendons have been put upon the market which are very defective. One lot of three hundred pounds, collected for him, was almost entirely from the large kangaroo, and so undesirable that he refused its acceptance. This has found its way into the American market, and is being distributed to the profession. Selected tendon should be furnished, all prepared, at ten dollars per hundred, although usually sold at a much higher price.

Dr. Marcy, in closing his paper, expressed the belief that all aseptic wounds, including even the larger amputations, should be closed in layers by buried tendon sutures without drainage. The edges of the skin should be coapted by means of a parallel continuous buried suture (sub-cuticular), and the wound sealed with iodoform collodion, strengthened by a few fibres of cotton.

The advantages of the buried sutures are briefly as follows: Aseptic, buried in aseptic wounds, they remain aseptic and the repair is primary without inflammation, pain, or suppuration. The iodoform collodion seal renders subsequent infection impossible. No sutures are to be removed, and no other dressing is required. The tendon is absorbed so slowly that it may be traced in the tissues months after implantation, and ultimately it is replaced by a band of vitalized connective tissue which serves as a permanent re-enforcement of the united structures.

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MEDICAL NOTES.

Congress of American Physicians and Surgeons. — At a meeting of the Executive Committee of the Congress of American Physicians and Surgeons, held in New York City, November 23d, the following officers were elected: President, Dr. Wm. H. Welch, Baltimore, Md.; Secretary, Dr. Wm. H. Carmalt, New Haven, Conn.; Treasurer, Dr. Newton M. Shaffer, New York City; Chairman of Executive Committee, Dr. Landon Carter Gray, New York City; Secretary of Executive Committee, Dr. Wm. K. Simpson, New York City. The next meeting of the Congress will be held at Washington, D. C., in May, 1897.

NEW ENGLAND.

Acute Infectious Diseases in Boston. — During week ending at noon, November 27, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 161, scarlet fever 37, measles 3, typhoid fever 20. For the week ending December 4, 1895, the following cases were reported: Diphtheria 132; scarlet fever 20; measles 3; typhoid fever 19.

The Medical Department of Dartmouth College.—The graduating exercises of the Medical Department of Dartmouth College were held on November 26th. The graduating class numbered thirty-eight members. The plan of teaching in this college includes a term of lectures with quizzes, extending from about the middle of July until the last of November, and a term more exclusively of recitations and laboratory work, extending from January 1st until the last of June. The students are arranged in three classes, and are required to complete the work of each year in regular order, passing an examination at the close of each year in the studies of that year. The Mary Hitchcock Memorial Hospital affords increased facilities for clinical instruction. It is a Cottage Hospital of thirty-six beds and is constructed after the most approved modern style for such buildings. A large and beautifully-lighted amphitheatre is provided for witnessing operations, which are gratuitously performed by members of the faculty before the class, during the year.

NEW YORK.

Civil Service Rules Applied to Hospital Appointments. — At a meeting of the Medical Society of the County of New York held November 26th, a resolution was adopted urging the mayor to place all appointments of visiting and assistant physicians and surgeons and all salaried resident medical officers of all the hospitals, asylums and other institutions under the control of the Commissioners of Public Charities and Correction under civil service rules.

The State Board of Health and the Milk-Supply of Cities. — At a meeting of the State Board of Health held at the Murray Hill Hotel on November 29th, it was decided to adopt vigorous measures to insure the purity of the milk-supply of the larger cities. The continuation of the work of destroying tuberculous cattle was resolved upon, and, in addition, a plan was proposed by President Wilson and Commissioner George B. Fowler, of the New York City Health Department, for the protection of the cities by the systematic inspection of dairies and farm-yards. It requires that before shipping their milk all dairymen and farmers must have the certificate of an inspector as to the cleanliness of the surroundings and the health of the cows. Owing to lack of funds this plan cannot be carried out at present, but all the precautions possible will be taken. Documents are to be issued by the board to the farmers and to consumers in the cities giving information and advice in regard to the purity of milk and the danger of disease. An effort will be made to secure a larger appropriation from the legislature at its approaching session, and a committee consisting of Health Officer Doty and Drs. Cassidy and Lewis was appointed to attend to the matter. Reports made at the meeting showed that during the past two months 139 head of cattle were killed on account of tuberculosis.

Professor Maragliano's Serum given a Trial in New York. — Dr. Francesco Carlucci, who attended the recent medical congress in Rome and later received a limited supply of his serum from Professor Maragliano, has used it with favorable results in three cases of tuberculosis in the wards of the Italian Hospital on Second Avenue. In one of these, in which the patient was in a much more advanced stage of the disease than Maragliano would have admitted for the trial of the remedy, the good effects seem to have been quite remarkable. He is a young Italian fruit-dealer whose mother died of tuberculosis, and when he was admitted to the hospital, on November 3d, his condition was so serious that it was not thought possible that he could survive more than a few days. The first injection, of one cubic centimetre of the serum, was made on November 6th. At that time his pulse was 130, respiration 34, and temperature 101°. The pulse rose to 136, the temperature remained the same, and the respiration fell to 32. Before the second injection, two days later, the temperature diminished, respiration became more nearly normal, and the pulse fell to 114. No reaction followed the injections, which were made every other day. On November 16th daily injections were begun. On November 22d the temperature was 99°, respiration, 22, and pulse 108, and on November 29th, the temperature, respiration and pulse were about the same. In addition, night-sweats, cough and expectoration have diminished, the strength and appetite have gained very materially, and the patient has greatly improved in every way. Dr. Carlucci recently cabled to Professor Maragliano for a further supply of the serum.

Leprosy in New York. — An Italian leper, thirty-two years of age, was removed to the hospital on North Brothers Island on November 25th. The patient, though born in Italy, had lived in Brazil for some years. He states that he removed to New York fifteen years ago, and the disease apparently originated there, as the authorities of the Bureau of Contagious Diseases who pronounced it to be leprosy are of the opinion that it has probably not existed more than a year. There is at present at North Brothers Island one other leper, a Chinese laundryman. It is stated that this is the first case of leprosy in a native of Italy that has come to the notice of the Health Department.

Summary Dismissal of the Medical Staff of the Fire Department. — The Board of Fire Commissioners have, for reasons best known to themselves, summarily dismissed the four physicians composing the medical staff of the Department, without preferring any charges against them, and reduced the staff to three. About the middle of November the Commissioners asked for the resignations of the Department physicians. Only one of them complied with this request. The physicians dismissed were Drs. Frank L. Ives, Robert A. Joyce, James A. McLochlin and John J. Quigley. The three appointed in their place were Drs. F. A. Lyons, C. B. Ramsdell and Francis M. Banta, who were selected as heading the civil service list. Of the four medical officers, Dr. Ives has been in the service twenty years, and Dr. Joyce, fourteen years, and they both entered before the civil service rules were applied to the Department. Dr. Quigley, who has served four years, and Dr. McLochlin, who has served three years, both passed civil service examinations. It is probable that the legality of the action of the Fire Commissioners in this matter will be contested. Only within the past week President Cruger of the Board of Park Commissioners asked for and received an opinion from the Corporation Counsel upon the particular point involved in the case. The latter informed the Park Board that it could dismiss any men who were paid by the day, but salaried men under civil service protection could not be removed except for cause and after proper trial.

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Miscellany.

MEDICAL OFFICERS OF THE STATE MILITIA AND THE ARMY MEDICAL SCHOOL, WASHINGTON.

The improvement during the past few years of our volunteer militia or national guard, has been marked, especially in the medical department. Medical men are now willing to enter the service, notwithstanding that in this State there is a stiff entrance examination of four to five hours in length, and an uncertain tenure of office. Men who would formerly have shunned such a position, owing to the odium which in times past attached to a militia service, now seek for vacant positions. Positions are now offered to medical men with the idea that they will do good professional work, and at the same time learn the technical duties of a medical-military officer; the summer camp is now in reality a school of instruction.

The tenure of office of medical officers unfortunately does not depend on good work and behavior, for the commanding officers are liable to change, and not infrequently men who are deeply interested in their work are forced to leave the service by the resignation of their commanding officer.

The medical department of the army has recognized the improved character of the militia medical service and has extended its cordial support, as shown by the following letter:

War Department, Surgeon-General's Office,
Washington, November 18, 1895.

Gen. E. J. Forster, *Surgeon-General of Massachusetts.*

Sir: – I have the honor, by direction of the Surgeon-General, to forward you the enclosed programme of the coming session of the Army Medical School, which has just been published.

Referring to communications from the former Surgeon-General, State of Massachusetts, General Burrell, in regard to the admission of medical officers of the volunteer militia to the School, the Surgeon-General would most heartily favor such a proposition, but it is proper to point out that, as you will see from the printed programme, much of the instruction given at the School would not be applicable to the needs of your service. The spaces for students in the pathological and chemical laboratories are entirely filled by our own student officers, nor would such instruction be specially desirable for gentlemen of the volunteer militia, since similar instruction could be obtained more conveniently in Boston.

If any medical officer of your service desires to avail himself of any part of this instruction that is available for him, such as the lectures and instruction in Hospital Corps Drill and First Aid, his application, approved by you, will be submitted to the Secretary of War by the Surgeon-General, cordially approved.

The lecture rooms of the School are always open to officers of your service who may chance to be in the city, and they will be very welcome. Very respectfully,

C. H. Alden, *Assistant Surgeon-General U. S. Army.*

ARMY MEDICAL SCHOOL, WASHINGTON, D. C.

Session of 1895-96, *beginning November* 18, 1895, *ending March* 13, 1896.

ORDER OF DUTIES.

Daily except Saturdays, Sundays and Holidays:
  9 A. M. to 12 M., Instruction in Pathological Laboratory.
  1 P. M. to 2.50 P. M., Instruction in Chemical Laboratory.
  3 P. M., Lecture.

Saturdays:
  9 A. M. to 10.15 A. M., Instruction in Hospital Corps Drill and First Aid at Washington Barracks, D. C.
  11 A. M. to 12 M., Instruction in Equitation at Fort Myer, Va. There are no exercises on Sundays, Thanksgiving Day, December 25 to January 1, inclusive, and Washington's birthday.

The lectures will be delivered as follows:
  Duties of Medical Officers, Mondays.
  Military Surgery, Tuesdays.
  Military Medicine, Alternate Wednesdays.
  Military Hygiene, Thursdays.

Hours for instruction in Operative Surgery will be designated by the Professor of Military Surgery.

AUXILIARY LECTURES.

Military Law, Lt. Col. G. B. Davis, Dep. Judge Adv. Gen., Prof. Mil. Law, U. S. Mil. Academy, March 2 to 6, inclusive.

Mental Diseases (Clinical), at Govt. Hospital for Insane, Washington, Fridays, Nov. 29, Dec. 13, Jan. 3 and 17.

The Army Medical Library, Dr. Robert Fletcher, F.R.C.S., Eng., Wednesdays, Feb. 19.

Parasites in Man, Prof. C. W. Stiles, Ph.D., Dept. Agriculture, Wednesdays, Nov. 27, Dec. 11, Jan. 8 and 22.

Instruction in Optometry, to be hereafter announced.

Due notice of any change of program will be posted on the bulletin board.

WALTER REED,
Major and Surgeon, U. S. Army,
Secretary of the Faculty.

Any medical officer desiring to avail himself of the opportunities afforded by the above letter, will confer with Surgeon-General Dr. Edward J. Forster, of Massachusetts, in person or by letter.

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Correspondence.

THE STUDY OF DERMATOLOGY IN EUROPE.

(Concluded from No. 22, p. 555.)

BRESLAU.

Breslau, the capital of Silesia, deserves in every way a much longer visit than I made there. After all the kindness which I received in Europe, it would be difficult to say that still more was shown me in Breslau than elsewhere, but nothing could exceed the hospitality of Professor Neisser.

The hospital in Breslau is only a few years old, and the neatness and cleanness of everything under the charge of Professor Neisser was impressed upon me all the more, coming as I did from the unhygienic old convent which now serves as the hospital of Prague. My first morning in Breslau was one of my pleasantest in Europe. Professor Neisser called for me in his carriage, and we drove out of town to the hospital which he has been so instrumental in having built. Everything is a model in its way, and everything is assembled under one roof. We first entered his private room, and from there began an inspection of the building, going directly into the library, where all the important treatises upon dermatology, old and new, are to be seen on the shelves, and all the magazines are to be found on the tables. The walls of the library and the adjoining lecture-room are extremely interesting on account of the photographs of men living and dead who have advanced the science of dermatology. The lecture-room is extremely well-lighted and very practical for teaching the skin. A platform stands in the middle of the room and on each side are benches for the students. I think that this allows more students a nearer view than an amphitheatre does. On the walls were small bottles filled with a great variety of the ointments, pastes, powders, washes, etc., which figure in the dermatological therapy of to-day. This collection was to me unique — I mean a purely dermatological one — and I merely mention it to show how thoroughly Professor Neisser has installed himself in his new hospital.

In the adjoining room is stored a wonderful collection of water-colors, large photographs, stereoscopic pictures and colored plates arranged on shelves in alphabetical order, so that one can find the object of one's search in a few moments. The photographs are the best I have ever seen, and are large, very clear and well-lighted, and the common and rare diseases almost all appear in the list. Before a window in the corridor stands a large stereoscope in which one can see to great advantage the wonderful effect of stereoscopy as applied to dermatological photographs. The effect is so magical that I felt as though I were being deceived, and that I were looking at a living being rather than at a picture. This method of demonstrating a skin disease to the student is to my mind second only to the models of Baretta of Paris, and Professor Neisser has so many rare diseases illustrated in his collection, that I felt as though I were attending some imaginary clinic of only rare and puzzling dermatoses.

The laboratories were the next rooms which occupied our attention. There are three large, airy and light rooms with great windows. The desks are covered with white porcelain and allow ample space for each worker. Everything was so scrupulously clean, and my guide and his assistants so cordial and kind, that I regretted more than ever the very long visit I made in Vienna. The students have material given them to investigate, and Professor Neisser is extremely generous with his time and advice, so that the student who has been seeking in all Europe a city where he can procure material and receive instruction from one of the best of modern dermatological pathologists — such a man, I say, can surely feel that in Breslau he has at last found his goal, and that in the delightful laboratories under the charge of Professor Neisser he can well afford to remain for months.

A large series of rooms is devoted to the out-patient department. They are all refreshingly clean and well ventilated, and comprise rooms for waiting, for interviewing, for examining on the table, for operating and for dressing. Every chamber, every instrument case, every article of furniture bore the same mark of neatness and cleanliness which had been so conspicuous in the rooms which I had previously seen. The out-patient clinic is large, though not so vast as the Parisian one. I did not have much opportunity to note the variety of cases for myself, but I can promise that from the house-patients and from the photographs and stereoscopic pictures I have before alluded to there must be an unusual number of wonderful cases observed every year. Breslau is so situated geographically that it draws upon a vast territory for its supply of patients, who flock to this capital of Silesia in great and interesting numbers.

It was not until the following day that Professor Neisser took me through his wards. At the time of my visit I saw no extremely unusual cases, and my host apologized for the paucity of his curiosities, which every man takes great pride in showing to the foreign visitor. But, for my part, the instructive cases of lupus, lupus erythematosus, leprosy, epithelioma, psoriasis, etc., well compensated for the lack of more uncommon types. The wards were extremely clean and airy, and the walls were covered with beautiful engravings of ancient Greece and Rome. So at last I had completed the tour of the hospital, the interior of which seemed to me to be the cleanest and most attractive of any I had seen in Europe.

The day before I left Breslau was one which I shall long remember. Dr. Jadassohn — whom I had previously met at Professor Neisser's house — drove me to the large, old and attractive hospital of the "All-holy Trinity," with its quaint old buildings, and its beautiful old garden overlooking the river Oder and filled with superb old elms and horse chestnuts. I had expected on entering the old building to find it exhibiting the usual signs of old age, but the same idea of health and cleanliness which actuated the authorities in Professor Neisser's hospital was equally patent here, and every bed, every floor, every wall of this large hospital was as fresh and hygienic and attractive as if it had been built the previous day.

The hospital is a general one in character, but Dr. Jadassohn has at least one hundred beds for skin and venereal diseases and a large out-patient department under his control. Overlooking the river is a laboratory where he and his assistants can work to great advantage. The visit was naturally a long and very interesting one. Dr. Jadassohn told me that most of the unusual cases went to Professor Neisser's hospital, but with the case of universal scleroderma and the many interesting examples of syphilis and other diseases, it seemed to me that he was a little too modest. After the visit, I waited in the laboratory while Dr. Jadassohn and one of his assistants showed me some rare and interesting microscopic slides, and then we drove out to Professor Neisser's clinic to see a few cases which he, with his great kindness, had requested to present themselves on that day for my especial benefit. They were examples which once in a while stagger the expert in dermatology — no matter how old he is, how much he has seen at home or abroad, or how much he has read and studied; even Professor Neisser could give me no diagnosis. To see several such anomalies in so short a space of time was bewildering. It was a proof to me of the idea which I had received from the photographs, that Professor Neisser has indeed a wonderful source from which he can draw his material. As a rule, it is country people who are the most atypical in their dermatoses, and so the vast province of Silesia with its one central capital proves to be no exception to the rule.

This reception of dermatological enigmas was the last scientific event of my most instructive and happy visit in Breslau, and I think I left no city in Europe so sorrowfully and regretfully as I did this one with its many hospitable people and its many-sided attractions. Surely no future student of dermatology should fail to allow Breslau a fair portion of his time in Europe; my inability to do so was one of the greatest errors I could have committed.

BERLIN.

Berlin is a curious city dermatologically, for none of the great hospitals have any clinics for the treatment of the skin. This appears to make the German capital unique among all other large cities, but still I think my assertion is correct. My purpose in visiting Berlin was to see the private clinic of Dr. Lassar, whose name is the most prominent in the dermatology of Berlin of to-day.

Dr. Lassar was still another instance of the hospitality and cordiality of foreign physicians. After a little conversation, we started upon our tour of inspection. Dr. Lassar's so-called clinic is in reality a hospital very richly equipped with all that is necessary for the reception and treatment and study of skin diseases. We first visited the waiting-room, dressing-rooms and office for private patients, which are in the same building, but isolated completely and guarded by a very zealous custodian. From this department, we went to that part of the house which is devoted to the poor, and there looked in upon the bathing-rooms, where medicated baths of all description were in progress. The rooms for the out-patients are very well arranged, and trained nurses are in daily attendance. Adjoining them is a large, well-lighted room devoted to the lectures which Dr. Lassar gives daily to a large body of students, who appeared to have more knowledge of cutaneous diseases than any similar class I have ever seen. The talks are clinical and rather informal, and Dr. Lassar is constantly calling upon some member of the class to make a diagnosis or to describe to the others the lesions which he sees upon a given skin. The instruction is supplemented by many good wax models. Continuing our inspection, we entered a large room filled to overflowing with wax models of all sizes — in fact, several entire figures were represented in wax, and very cleverly, too. Off of this little museum is a small workshop where the numerous casts are being manufactured constantly by a man who works entirely for Dr. Lassar and who daily adds to the collection of models and photographs in this small hospital. On the upper stories are bedrooms and an attractive operating-room, and over all we found the laboratories. So one may see how complete this little establishment is; and during my week with my kind host I saw very many instructive cases and heard several good lectures.

As I said above, the dermatology of Berlin is governed almost entirely by private individuals. There are several other clinics, but my time was so short that I unfortunately was obliged to leave them without even a passing glimpse. A friend spoke very well of Dr. Joseph's, but personally I did not visit it.

With the termination of my seven days in Berlin my wanderings in clinics unknown to me were finished and my home journey took me again to my ideal St. Louis in Paris and finally to London. It has been a long story for my readers, I fear; but I have tried to describe all I saw as minutely and carefully as possible, so that any one desirous of devoting some time to the study of dermatology in Europe could learn what advantages and what disadvantages are to be encountered in the various cities which I was fortunate enough to visit. I hope I have been fair and just in my estimate and criticism of the men whom I met and their methods. If at times I have said things uncomplimentary, it has been solely for the possible advantage of future young men who may study in Europe. I trust I have been impartial and just.

Before closing this sketch of my studies, I want to formulate a plan of work which I would have followed if I had known before all that experience has taught me of European dermatologists and their clinics and laboratories. I should give the following as my advice, considering the time to be enjoyed as two years and three months. I mention the cities in the order and the time of the year most advantageous from my observations, and it will be noticed that the names of four cities appear which I have not described, because opportunity for visiting them was not practicable for me. Bergen I should go to in order to see more leprosy than could be found even in Trondjhem. Buda Pesth would be very valuable for microscopic work under Török. Hamburg would allow one a chance to consider the unique ideas of Unna and to work in his laboratory; and Lille would afford an opportunity for study under Leloir, whose work with the microscope has made his name so prominent:

1.	Paris	Oct. 1 to Aug. 1	Ten months
2.	Christania Bergen Trondjhem	Aug. 1 to Aug. 10	Ten days
3.	Buda Pesth	Aug. 10 to Oct. 10	Two months
4.	Vienna	Oct. 10 to Feb. 10	Four months
5.	Prague	Feb. 10 to May 10	Three months
6.	Breslau	May 10 to Aug. 10	Three months
7.	Berlin	Aug. 10 to Aug. 17	One week
8.	Hamburg	Aug. 17 to Sept. 17	One month
9.	Bonn	Sept. 17 to Sept. 30	Two weeks
10.	London	Sept. 30 to Oct. 30	One month
11.	Lille	Oct. 30 to Nov. 30	One month
12.	Paris	Nov. 30 to Dec. 7	One week

Charles J. White, M.D.

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DEATH BY SUBMERSION.

Washington, D. C., November 30, 1895.

Mr. Editor: — In looking over your issue of the 28th inst., I find a letter from Dr. Hunt asking for information in regard to drowning. In addition to your interesting communication in the same number of your Journal, I will call the doctor's attention to an article by Dr. Irving C. Rosse on "Death by Submersion" in the first volume of Witthaus' and Becker's "Medical Jurisprudence" in which the subject is thoroughly brought up to date. Perhaps Dr. Hunt has read this work already.

I remain yours, respectfully, E. L. Morgan, M.D.

[The position taken in Dr. Rosse's article with regard to the time of possible recovery after submersion is in entire accord with the view expressed in our editorial. The only definite statement made on this point by Dr. Rosse in the work referred to is, "Life is extinct in the majority of cases after two minutes, and the chance of restoration after five minutes of complete submersion is doubtful." In Woodman and Tidy's "Forensic Medicine," p. 923, is the statement that Dr. Wooley, who was for many years medical officer of the Royal Humane Society of London, in all his enormous experience met with but two cases of recovery after five minutes' submersion. — Ed.]

RESUSCITATION AFTER SUBMERSION.

Boston, December 2, 1895.

Mr. Editor: — Your editorial, "Resuscitation after Submersion," together with Dr. Hunt's letter interest me, inasmuch as I have had a certain amount of experience in cases of drowning. Of five which I have seen, three are worth mentioning.

The first was that of a man who had been submerged possibly twenty minutes. In this instance prolonged efforts at resuscitation were of no avail.

The second case was that of a man who was seen to throw up his arms and sink while swimming a short distance from the shore. Possibly ten minutes elapsed before the body was recovered and artificial respiration commenced. Ten minutes later I reached the spot and finding upon inquiry that no effort had been made (aside from suspending him by the feet) to get rid of the water in the lungs and stomach, I placed him face downwards upon a barrel and lay upon him with my entire weight, two or three times, the result being a discharge of a large quantity of water from the mouth. Artificial respiration was again commenced and continued while he was being transported to a blacksmith's shop where heat, hypodermic injections of stimulants and the usual means of resuscitation were employed and persisted in for more than an hour without success.

The third case was that of a boy who was rescued after a very brief submersion (two or three minutes) and who promptly responded to artificial respiration. There were râles heard at the bases of both lungs, showing that a small amount of water had passed down the trachea; these, however, disappeared within twenty-four hours, their departure being, perhaps, hastened by digitalis and brandy.

Upon the whole, I am not inclined to take a cheerful view of drowning. Possibly the "rhythmical tractions of the tongue," from which such brilliant results have been obtained in France during the past year in children apparently still-born may give better results than the usual method of artificial respiration in cases of drowning. The partial recovery of a suicide by hanging (lately cited in the *Tribune Médicale*), in which this method was employed, is somewhat encouraging. Yours truly,

F. Gordon Morrill, M.D.

◆

THE INDEX MEDICUS.

Washington, D. C., November 27, 1895.

Mr. Editor: — We ask permission to state that the plan proposed for continuing the publication of the *Index Medicus* having been successful, no more subscriptions can be received.

John S. Billings, M.D.,
Robert Fletcher, M.D., } *Editors.*

METEOROLOGICAL RECORD,

For the week ending November 23d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..17	29.94	44	47	40	85	100	92	S.E.	S.E.	3	8	O.	R.	.58
M..18	29.95	50	58	41	85	61	73	W.	W.	13	4	C.	O.	.16
T. 19	29.88	54	63	46	86	91	88	S.E.	S.E.	8	6	C.	F.	—
W..20	29.26	55	61	49	94	100	97	S.	W.	8	10	O.	O.	.98
T..21	29.79	28	32	25	82	68	75	W.	W.	25	17	C.	C.	.19
F..22	30.58	28	36	21	73	73	73	W.	E.	7	5	C.	O.	—
S..23	30.31	42	57	28	90	70	80	N.W.	S.W.	5	21	O.	R.	—
☞														1.91

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 23, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,892,332	676	243	13.95	20.70	3.03	.75	5.25
Chicago . . .	1,678,967	416	154	20.40	13.44	4.60	3.12	12.24
Philadelphia .	1,164,000	386	117	13.52	11.18	.78	1.82	9.10
Brooklyn . .	1,100,000	358	125	15.12	9.99	1.89	1.35	8.37
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	491,205	211	62	13.16	10.34	—	.94	10.81
Baltimore . .	496,315	168	57	12.00	8.40	2.40	1.20	4.80
Cincinnati . .	336,000	98	28	12.24	15.30	3.06	2.04	6.12
Cleveland . .	314,537	—	—	—	—	—	—	—
Washington .	275,500	99	28	15.15	8.08	5.05	7.07	—
Pittsburg . .	238,617	90	32	19.98	8.88	3.33	7.77	5.55
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	27	3	14.80	18.50	7.40	7.40	—
Charleston . .	65,165	29	8	10.35	20.70	6.90	—	3.45
Portland . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	26	12	19.25	—	3.85	3.85	—
Fall River . .	88,020	39	18	10.24	5.12	5.12	2.56	—
Lowell . . .	84,359	30	13	6.66	10.00	3.33	—	3.33
Cambridge . .	81,519	20	5	10.00	5.00	—	—	10.00
Lynn	62.355	23	6	13.05	17.40	—	—	8.70
New Bedford .	55,254	16	5	12.50	12.50	12.50	—	—
Springfield . .	51,534	10	3	20.00	10.00	10.00	—	10.00
Lawrence . .	52,153	10	2	10.00	20.00	—	—	10.00
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	9	3	11.11	—	11.11	—	—
Brockton . .	33,157	8	1	—	12.50	—	—	—
Haverhill . .	30,185	4	0	—	25.00	—	—	—
Malden . . .	29,706	8	1	12.50	—	12.50	—	—
Chelsea . . .	31,295	15	4	20.00	46.66	—	—	13.33
Fitchburg . .	26,394	3	0	33.33	33.33	—	—	—
Newton . . .	27,022	8	2	12.50	12.50	—	—	12.50
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	3	1	—	—	—	—	—
Waltham . .	20,877	6	1	—	33.33	—	—	—
Quincy . . .	20,712	—	—	—	—	—	—	—
Pittsfield . .	20,447	4	1	—	50.00	—	—	—
Everett . . .	18,578	—	—	—	—	—	—	—
Northampton .	16,738	2	1	—	—	—	—	—
Newburyport .	14,554	5	0	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,892; under five years of age 970; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 429, consumption 319, acute lung diseases 311, diphtheria and croup 211, diarrheal diseases 78, typhoid fever 56, scarlet fever 20, measles 18, whooping-cough 16, cerebro-spinal meningitis 15, malarial fever 9, erysipelas 6.

From scarlet fever New York 7, Brooklyn 4, Philadelphia and Pittsburgh 3 each, Boston, Fall River and Lynn 1 each. From measles New York 10, Baltimore 3, Providence 2, Philadelphia, Brooklyn and Cincinnati 1 each. From whooping-cough New York 6, Brooklyn 4, Philadelphia 3, Boston, Providence and Worcester 1 each. From cerebro-spinal meningitis Chicago 5, New York Washington and Worcester 2 each, Baltimore, Boston, Somerville and Chelsea 1 each. From malarial fever New York and Brooklyn 3 each, Baltimore 2, Washington 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530, for the week ending November 16th, the death-rate was 19.1. Deaths reported 3,876; acute diseases of the respiratory organs (London) 340, measles 163, diphtheria and croup 107, diarrhea 83, whooping-cough 66, fever 64, scarlet fever 38, small-pox (West Ham) 1.

The death-rates ranged from 10.0 in Huddersfield to 36.4 in Blackburn; Birmingham 20.2, Bradford 18.9, Cardiff 18.4, Gateshead 22.8, Hull 17.3, Leeds 16.5, Leicester 13.2, Liverpool 30.8, London 17.9, Manchester 22.0, Newcastle-on-Tyne 18.6, Nottingham 20.9, Portsmouth 14.9, Sheffield 15.7, West Ham 15.0.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 30, 1895.

F. Anderson, surgeon, detached from the "Amphitrite" and ordered to the "Dolphin."

P. M. Rixey, surgeon, detached from the "Dolphin" and placed on waiting orders.

J. E. Gardner, surgeon, detached from Port Royal Station and ordered to the "Amphitrite."

I. W. Kite, passed assistant surgeon, detached from the "Franklin" and ordered to the Naval Hospital, New York.

T. A. Berryhill, passed assistant surgeon, detached from the Naval Hospital, New York, and ordered to the Port Royal Naval Station.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 23, 1895, TO NOVEMBER 29, 1895.

Leave of absence for one month, to take effect about December 4, 1895, is hereby granted **Major George W. Adair**, surgeon, Washington Barracks, D.C.

INTERNATIONAL CONGRESS OF PSYCHOLOGY.

The Third International Congress of Psychology will be held at Munich from the 4th to the 7th of August, 1896. Prof. Dr. Lipps, München, Georgenstrasse, is Chairman of the Committee of Reception.

The opening of the Congress will take place on the morning of August 4, 1896, in the great "Aula" of the Royal University. All psychologists and all educated persons who desire to further the progress of psychology and to foster personal relations among the students of psychology in different nations are invited to take part in the meetings of the Congress. Female members will have the same rights as male.

The languages used at the Congress may be German, French, English and Italian.

The Congress will perform its work in general and sectional meetings. The division of the sections will be arranged according to the papers and addresses which may be offered. The meetings take place at the Royal University. The length of the papers or addresses at the sectional meetings is limited to twenty minutes. It is hoped that any member who takes part in the discussion will, to ensure a correct report of his speech, give the chief points of it (on a form which will be provided) either during or at the close of the meeting.

Any psychologist who offers a paper or address is requested to send to the Secretary before the beginning of the Congress a short written abstract of its contents. These abstracts will be printed and distributed amongst the audience, so that the different languages used at the Congress may be better understood.

Programme of Work. — I. Psycho-physiology. II. Psychology of the Normal Individual.— III. Psycho-pathology.— IV. Comparative Psychology.

Members who intend to lecture at this Congress are requested to announce their themes and to send extracts of them to the Secretary's office (Munich, Max-Josephstreet 2) before the 15th of May, 1896.

For themes announced after the 15th of May the committee cannot promise admittance. It is very desirable to give orders for lodgings in advance, because at the beginning of August the hotels of Munich are very full.

Arriving members of the Congress may inquire at the station after the bureau of the Verein zur Förderung des Fremdenverkehrs, and they will willingly give all information about hotels, pensions and private lodgings to be recommended.

The Secretary's office from the 3d of August during the Congress is at the Royal University (Ludwigstrasse 17).

Prof. William James, 95 Irving Court, Cambridge, Mass. Prof. G. S. Fullerton, 116 Spruce Street, Philadelphia, Penn. Prof. Stanley Hall, Clark University, Worcester, Mass. Dr. Newbold, University of Pennsylvania, Philadelphia, Penn. Prof. H. Donaldson, Chicago, Ill., are the American members of the International Committee of Organization.

The General Secretary of the Committee is Dr. Frhr. von Schrenck-Notzing, München, Max-Josephstrasse.

RECENT DEATH.

Dr. F. P. Porcher, a well-known physician and botanist, died at Charleston, S. C., on November 19th, at the age of seventy. He was professor of materia medica and therapeutics in the Medical College of the State of South Carolina and was the author of works on pharmaceutical botany.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Thursday evening, December 12th, at 8 P. M., by Asst. Prof. Franklin Dexter. Subject: "A Glance at the Structural Plan of the Brain." The profession are invited.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Symptomatic Anæmia. By W. Blair Stewart, A.M., M.D., Atlantic City, N. J. Reprint. 1895.

The Technique of Tenotomy of the Ocular Muscles. By Leartus Connor, A.M., M.D , Detroit, Mich. Reprint. 1895.

Traumatic Separation (Compound) of the Lower Epiphysis of the Femur. Craniectomy; An Improved Technique. By A. H. Meisenbach, M.D., St. Louis. Reprints. 1895.

ow complete in Twelve Parts, at 50 cents each. Part I will be sent on receipt of 50 cents; or the complete work of twelve Parts for $5.00, sent by mail.

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BENZOSOL IN DIABETES.

In a paper on this subject, Dr. J. Blake White, of N. Y., Physician to the City Hospital, says, "BENZOSOL certainly manifests a most potent influence in controlling elaboration of Sugar."

Reprint of Dr. White's interesting paper sent upon request.

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum		19
Anheuser-Busch Brewing Association		4
Antikamnia Chemical Company	Antikamnia	18
Armour & Co	The Armour Laboratory	14
Ayer's Hygienic Coffee		3
Baker, L. W., M.D	Riverview	19
Baker, Dr. W. H	Cara	19
Battle & Co.	Bromidia	30
Bellevue Hosp. Med. Col.	Sessions of '94-95	16
B. H. R. Distilling Co.		29
Borine Chemical Co.		22, 24
Bowdoin College	Medical Department	16
Bowker, Dr. E. M.	Vaccine Virus	21
Boylston Medical Prize Questions		2
Channing, Dr. Walter		19
Chauncy Hall School		31
Cocke, Dr. James R.		19
Codman & Shurtleff	Surgical Instruments	3
Coll. of Physicians and Surgeons, Boston		16
Crittenton, C. N.	Vinolia Soap	20
Cutter, Dr. W. P		19
Dartmouth College, N. H.	Med. Department	16
Drevet Co.	Hydrozone	15
Edes, Dr. R. T.		19
Fairchild Bros. & Foster	Panopepton	7
Feeble-Minded Youth, Inst. for	Barre, Mass.	19
Fehr, Dr. J.	Baby Powder, etc.	4
Fellows, James I.	Hypophosphites	25
Fisk & Arnold	Artificial Limbs	21
Flood, Dr. Everett		19
Fougera, E. & Co.	Imp'g Pharmacists	9, 27
Gear, J. Frank	Surgical Instruments	17
Goldthwaite, Dr. S. V.		19
Goode, T. F.	Buffalo Lithia Water	13
Gould's Medical Dictionary		28
Graham, Dr. Douglas	Treatise on Massage	26
Greene, Dr. E. M.	Examinations of Sputa	19
Harvard University	Dental Department	16
Harvard University	Medical Department	32
Improved Movement Cure Institute		23
Leedom, Charles	Nuclein Solution	5
Lehn & Fink	Mfg. Chemists	12
Lloyd, Andrew J. & Co.	Manufg. Opticians	2
Long Island College Hospital		16
Mackie, Dr. L. V. G.	Sanitarium	19
Maltine Mfg. Co.	Maltine	11
Mariani & Co.	Vin Mariani	11
Marks, A. A.	Artificial Limbs	20
Martin, Dr. F. C.	Vaccine Virus	3
Mass. Charitable Eye and Ear Infirmary		2
McElroy, P. J	Glass Syringes	21
Medico-Chirurgical College		16
Norton, Dr. Eben C.	Card	19
N. Y. Pharmaceutical Co.		26
N. Y. Polyclinic and Hospital		16
Oakland Chemical Co.	Hydrogen Dioxide	10
Office To Let		2
Parke, Davis & Co.	Pharmaceutical Chemists	1
Patch, E. L. Co.	Lithia Tablets	6
Peake & Buzzell	Surgeons' Supplies	24
Pinaud, Ed.	Sels Romains	22
Polk, R. L. & Co.	Med. and Surg. Register	23
Position Wanted		2
Post-Graduate, The		17
Purdue Frederick Co., The		5
Ring, Dr. Allan Mott	Nervous Diseases	19
Rosse, Dr. Irving C.		19
Russell, Dr. F. W	Card	19
Schieffelin & Co.	Mfg. Chemists	14
Schulze-Berge & Koechl	Migranin, etc.	3, 31
Seeley, I. B. & Co.	Hard Rubber Trusses	6
Sharp & Dohme	Mfg. Chemists	5
Stedman, Dr. Henry R.	Card	19
Stillings, Dr. L. C.	Card	19
Tanner, E. S.	Publisher	31
Thayer, Henry & Co.		20
Theodore Metcalf Co.	Coca	8
Twitchell, Dr. George B.	Card	19
Tyree, J. S.	Antiseptic Powder	6
Umpleby, J. T.	Photography	2
University of Vermont		17
Vapo-Cresolene Co.		23
Walnut Lodge Hospital		19
Waterman, Dr. Thomas	Animal Vaccine Virus	[illegible]
Weeks & Potter Co.	Quinona	30
Wheeler, Dr. T. B.	Phosphates	6
White, Dr. Walter H.	Card	19
Willard, Dr. A. J.	Card	19
Woman's Medical College, Baltimore		16
Woman's Med. Coll. of the New York Infirmary		16
Woodward, L. F.	Stammering	16
Yale University	Medical Department	16

HARVARD UNIVERSITY, Medical Department, BOSTON, MASS.

COURSES OF STUDY FOR GRADUATES (1895-96).

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Massachusetts General Hospital, Boston Lying-in Hospital, Boston City Hospital, The Children's Hospital, Free Hospital for Women.
Boston Dispensary, McLean Asylum for the Insane, Mass. Eye and Ear Infirmary, Boston Lunatic Hospital, The Carney Hospital.

Instructors in the Medical School are members of the medical and surgical staff of these institutions.

Teaching will be conducted in small classes and under the personal direction of the heads of the departments.

The courses will be mostly of eight weeks' duration, and the practitioner will be able during a brief residence to take several of them. Those desiring to study a specialty may pursue long, continuous courses in any single branch at reduced rates. All fees are payable at the Medical School to the Secretary.

A graduate of another recognized Medical School may obtain the degree of M.D. from this University after a year's study in the graduate course and after passing all the required examinations in under-graduate work. These examinations may be passed at such times as are agreed upon by the examiners and the graduate student. A certificate of attendance will be furnished when desired.

The following Courses are announced for 1895-1896.

SUBJECT.	INSTRUCTOR.	PLACE.	TIME.	FEE.
1. Anatomy of the Joints	Dr. Dwight	Medical School	Special*	$25.
2. Dissection Courses	Dr. Dexter	Medical School	After Nov. 1	20.
3. Special Anatomical Instruction	Dr. Dwight	Medical School	Special*	Special.*
† 4. Histology and Microscopy	Dr. Minot	Medical School	Special*	30.
† 5. Elementary Human Embryology	Dr. Minot	Medical School	Special*	25.
† 6. Advanced Embryology	Dr. Minot	Medical School	Oct.—May	75-125
† 7. Physiology	Dr. Bowditch	Medical School	Special*	Special.*
† 8. Medical Chemistry	Dr. Wood	Medical School	Special*	35.
9. Clinical Microscopy	Dr. Whitney	Massachusetts General Hospital	Special*	Special.*
†10. Surgical Pathology	Dr. Mallory	Medical School	Apr., May	20.
†11. Pathology of the Infectious Diseases.	Dr. Wright	Medical School	Nov., Dec.	25.
†12. Pathological Anatomy and Histology of the Nervous System	Dr. Taylor	Medical School	Special*	15.
13. Clinical Medicine	Dr. Ernst	Massachusetts General Hospital	Oct.	15.
†14. Clinical Medicine	Dr. Knight	Boston City Hospital	Oct., Nov.	10.
†15. Clinical Medicine	Dr. Mason	Boston City Hospital	Nov., Dec., Jan.	20.
‡16. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Oct.	20.
‡17. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Dec.	20.
‡18. Abdominal Surgery	Dr. Conant	St. Elizabeth's Hospital	Oct., Nov.	25.
19. Clinical, Operative, Genito-urinary, Pathological and Minor Surgery	Drs. Monks and Thorndike	Boston City Hospital	Oct.—Dec.	25.
20. Clinical, Operative, and Minor Surgery	Drs. Burrell, Lovett, and Munro	Boston City Hospital	Dec.—Apr.	25.
21. Operative Surgery	Dr. C. B. Porter	Medical School	Special*	25.
22. Clinical Surgery	Dr. M. H. Richardson	Massachusetts General Hospital	Feb., March, Apr., May	25.
‡23. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Oct., Nov., Dec.	25.
‡24. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Apr., May, June	25.
25. Minor Surgery	Dr. Scudder	Massachusetts General Hospital	Feb., ‡Apr., ‡May	35.
26. Clinical Surgery	Dr. Gay	Boston City Hospital	Apr., May	15.
27. Clinical Surgery	Dr. Homans	Massachusetts General Hospital	March, Apr.	20.
†28. Orthopedic Surgery	Dr. Bradford	Children's Hospital	Apr.	15.
29. Clinical Obstetrics	Dr. W. L. Richardson	Boston Lying-in Hospital	Nov., Dec., April, May	20.
30. Clinical Obstetrics	Dr. C. M. Green	Boston Lying-in Hospital	Jan., Feb., March	20.
31. Practical Obstetrics	Dr. Reynolds, Townsend, and Haven	Boston Lying-in Hospital	Special*	20.
32. Operative Obstetrics	Dr. C. M. Green	Medical School	Special*	25.
33. Diseases of the Skin	Dr. White	Massachusetts General Hospital	Oct.—June	25.
34. Otology	Dr. Blake	Infirmary	Dec., Jan., Apr., May	25.
35. Otology	Dr. Bryant	Infirmary	Dec., Jan	25.
†36. Ophthalmology	Dr. Standish	Infirmary	Dec., Jan.	Special.*
†37. Ophthalmology	Dr. Cheney	Massachusetts General Hospital	March, Apr.	Special.*
38. Gynecology	Dr. Swift	Free Hospital for Women	Oct.	25.
39. Gynecology	Dr. Swift	Free Hospital for Women	Dec.	25.
40. Gynecology	Dr. Davenport	Free Hospital for Women	Jan.	25.
41. Gynecology	Dr. Davenport	Free Hospital for Women	March	25.
42. Gynecology	Dr. Haven	Boston Dispensary	Nov.	25.
43. Gynecology	Dr. Swift	Boston Dispensary	Jan., Feb.	25.
44. Gynecology	Dr. C. M. Green	Boston City Hospital	Oct., Nov., Dec.	25.
45. Operative Gynecology	Dr. Davenport	Medical School	Special*	25.
46. Diseases of the Nose and Throat	Dr. De Blois	Boston City Hospital	Feb., March	Special.*
‡47. Diseases of the Nose and Throat	Dr. Farlow	Boston Dispensary	Oct.—Jan.	Special.*
‡48. Diseases of the Nose and Throat	Dr. Farlow	Boston City Hospital	Apr., May.	Special.*
‡49. Diseases of the Nose and Throat	Dr. Coolidge	Massachusetts General Hospital	Feb., March	Special.*
†50. Mental Diseases	Dr. Cowles	McLean Hospital	Special*	10.
†51. Bacteriology	Dr. Ernst	Medical School	Special*	25.
†52. Diseases of Children	Dr. Wentworth	Children's Hospital	Oct., Nov.	20.
†53. Diseases of Children	Dr. Wentworth	Children's Hospital	Dec., Jan.	20.
†54. Diseases of Children	Dr. Buckingham	Children's Hospital	Feb., March	20.
†55. Diseases of Children	Dr. Buckingham	Children's Hospital	Apr., May	20.
†56. Neurology	Dr. Knapp	Boston City Hospital	Feb., March	20.
†57. Neurology	Dr. Knapp	Boston City Hospital	Apr., May	20.
58. Neurology	Dr. Walton	Massachusetts General Hospital	Nov.	20.
59. Legal Medicine	Dr. Draper	Boston City Hospital	Oct.—June	25.
60. Hygiene	Dr. Harrington	Medical School	Special*	25.

* To be arranged with instructor. † Women admitted. ‡ Women admitted conditionally.

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PAGE

ORIGINAL ARTICLES.

THE BACTERIOLOGICAL EXAMINATION OF NINE AUTOPSIES ON CASES OF DIPHTHERIA TREATED WITH ANTITOXIN. *By Wm. Royal Stokes, M.D.*, Resident Assistant Pathologist, Boston City Hospital 581
CLINICAL EXPERIENCE IN ABDOMINAL SURGERY AT THE MASSACHUSETTS GENERAL HOSPITAL. *By J. Collins Warren, M.D.* (Concluded.) 582
SYPHILITIC WARTS. *By James E. Free, M.D.*, Billings, Montana 584

CLINICAL DEPARTMENT.

CASES OF INTEREST FROM THE SUMMER GYNECOLOGICAL SERVICE AT THE BOSTON CITY HOSPITAL. *By John G. Blake, M.D.* 585
A CASE OF PENETRATING WOUND OF THE ABDOMEN AND LARGE INTESTINE. ABDOMINAL SECTION; SUTURE OF THE INTESTINE; RECOVERY. *By F. C. Thayer, M.D.*, Waterville, Me., Surgeon-General, State of Maine 588
A CASE OF SPONTANEOUS RUPTURE OF THE UTERUS. *By Charles W. Townsend, M.D.* 589

MEDICAL PROGRESS.

REPORT ON DISEASES OF CHILDREN. *By T. M. Rotch, M.D.*, and *A. H. Wentworth, M.D.* 589
Intra-Uterine Infection with Typhoid Fever. — Icterus Neonatorum; Theory of Quincke, by Schreiber. — The Nature of Barlow's Disease. — Tapping the Vertebral Canal.

REPORTS OF SOCIETIES.

AMERICAN DERMATOLOGICAL ASSOCIATION. NINETEENTH ANNUAL MEETING, WINDSOR HOTEL, MONTREAL, CAN., SEPTEMBER 17-19, 1895. (Concluded.) 592
Urticaria Pigmentosa; a Case Twenty Years under Observation. — Statistical Report. — Ulerythema Sycosiform. — Erysipelas. — The Value and Limits of the Usefulness of Electrolysis in Dermatology. — Election of Officers.

PAGE

MISSISSIPPI VALLEY MEDICAL ASSOCIATION. TWENTY-FIRST ANNUAL MEETING, DETROIT, SEPTEMBER 3-6, 1895 595
The President's Address. — The Gold Combinations as Alteratives. — Legitimate Pharmacy. — Method of Preventing Thirst after Celiotomy. — Celiotomy in General Suppurative Peritonitis, with the Report of a Case. — Peritoneal Irrigation and Drainage. — Three Cases Hysterectomy after Celiotomy for Pus Tubes.
THE OBSTETRICAL SOCIETY OF BOSTON. *Charles W. Townsend, M.D.*, Secretary 598
Cases of Interest from the Summer Gynecological Service at the Boston City Hospital. — A Case of Spontaneous Rupture of the Uterus. — A Case of Extra-Uterine Pregnancy.

RECENT LITERATURE.

Remote Consequences of Injuries of Nerves and their Treatment. By John K. Mitchell, M.D. Philadelphia: Lea Brothers & Co. 1895 599
Leçons sur les Maladies Nerveuses. By E. Brissaud. Paris: G. Masson. 1895 599
A Treatise on Nervous and Mental Diseases. By Landon Carter Gray, A.M., M.D. Philadelphia: Lea Brothers & Co. 1895 600
Modern Medicine and Homeopathy. By John B. Roberts, A.M., M.D. Philadelphia: The Edwards & Docker Co. 1895 600
Mentally-Deficient Children; Their Treatment and Training. By G. E. Shuttleworth, B.A., M.D. London: H. K. Lewis. 1895 600
Skiascopy, and its Practical Application to the Study of Refraction. By Edward Jackson, A.M., M.D. Philadelphia: The Edwards & Docker Co. 1895 600
Outlines of Materia Medica and Pharmacology. By H. M. Bracken, M.D. Philadelphia: P. Blakiston, Son & Co. 1895 601
A Guide to the Aseptic Treatment of Wounds. By Dr. C. Schimmelbusch. New York & London: G. P. Putnam's Sons. 1895 601
The Science and Art of Obstetrics. By Theophilus Parvin, M.D. Philadelphia: Lea Bros. & Co. 601

PAGE

A Manual of Obstetrics. By A. F. A. King, A.M., M.D. Philadelphia: Lea Brothers & Co. 1895 60
La Méthode Brown-Séquard, Traité d'Histothérapie: Par le Dr. M. Bra. Paris: J. Rothschild. 60
Medical Record Visiting-List and Physicians' Diary for 1896. New York: William Wood & Co. 1895. 60

EDITORIALS.

PSYCHICAL RESEARCH AND EUSAPIA PALLADINO. 60
TREATMENT OF MORPHINOMANIA 60
THE WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE 60
A BILL TO ESTABLISH A BOARD OF EXPERT MEDICAL WITNESSES 60
MEDICAL NOTES 60
The St. Louis Academy of Medical and Surgical Sciences. — Tea Cigarettes. — Zoolatry. — The Sale of Antitoxin. — Foreign Medical Men in Paris. — Physicians must Testify. — A Journal of Experimental Medicine.
New England.
Acute Infectious Diseases in Boston. — Prosecutions under the Medical Registration Law. — Nomination of Professor Richards as Trustee of the Hospital for Dipsomaniacs.
New York.
The New York Academy of Medicine. — Diphtheria in a North German Lloyd Steamer. — Small-pox on a Naples Steamer. — Arrest for Conducting a Private Insane Asylum without a License. — Death of Dr. Hiram M. Eddy — Death of Dr. Gideon L. Knapp. — A Low Mortality Rate.

CORRESPONDENCE.

SHOULD DOCTORS WEAR BEARDS? *F. A. Colby, M.D.*, Berlin, Coos County, N. H. 60

MISCELLANY.

BANQUET AND PRESENTATION IN HONOR OF JOHN S. BILLINGS, M.D., LL.D. 60
THE DIAGNOSIS OF SALIVARY CALCULUS 60
ARMY AND NAVY SERVICES 60
SOCIETY NOTICES 60

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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See pages 16, 17, 18 and 19.

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PAGE 4.

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Original Articles.

THE BACTERIOLOGICAL EXAMINATION OF NINE AUTOPSIES ON CASES OF DIPHTHERIA TREATED WITH ANTITOXIN.[1]

BY WM. ROYAL STOKES, M.D.,
Resident Assistant Pathologist, Boston City Hospital.

The occurrence in diphtheria of a general infection with one or more of the pyogenic organisms in addition to that with the bacillus diphtheriæ has only recently been satisfactorily demonstrated.

Barbier[2] and others, have pointed out from conclusions based mainly upon the bacterial examination of the throat, and clinical observation, the existence of two distinct forms of diphtheria, one a simple infection with the bacillus diphtheriæ, the other a mixed infection with one or more of the pyogenic cocci. The objective demonstration, however, at autopsies on diphtheria, of the invasion of the various organs by pyogenic cocci has received but little attention.

Geneserich,[3] in the examination of 25 autopsies, found the streptococcus in the blood and internal organs of four cases, and in a number of others the staphylococcus pyogenes albus was present. Wright and Stokes,[4] in 21 out of 31 cases, or in nearly 70 per cent., found a more or less general invasion of the internal organs by the pyogenic bacteria, of which the streptococcus was the one most frequently observed. Reiche[5] has recently examined cultures from the spleen and kidney of 42 cases of diphtheria, in 64 per cent. of which he found streptococci and staphylococci together, and in 41 per cent. of which streptococci were found alone. Ricker[6] has also demonstrated streptococci in pure culture from the liver of a fetus, and in a placenta from a woman six months pregnant, who died of septic diphtheria.

These observations are of interest as showing, not only that diphtheria in the majority of cases is not an infection with the bacillus diphtheriæ alone, but also because they explain the inefficiency of antitoxin in many cases, for this agent cannot be assumed to act against any other organism than the bacillus diphtheriæ.

Besides this matter of poly-infection in diphtheria, the occurrence of this bacillus in the various internal organs has only recently been demonstrated as frequent, and is of considerable interest.

Until the work of Frosch[7] in 1893 it was generally believed that the bacillus diphtheriæ was only to be found in the local lesions. This investigation, however, proved that the bacillus invaded the internal organs by demonstrating its presence in cultures made from large amounts of material taken from the blood and various organs of individuals dead of diphtheria. Kolisko and Paltauf[8] have also reported the presence of this organism in the spleen of one case; Schmorl[9] in the cervical glands, in seven out of ten cases; and Booker[10] has recently obtained it in cultures from the spleen, submaxillary gland, lung, and blood of the heart. Kutcher[11] observed it once in the liver, and once in the kidney; and Wright and Stokes[4] found it in the lung in 30 out of 31 cases, in the liver in 9 out of 29 cases, in the kidney in 6 out of 31, in the spleen in 5 out of 31, in the blood of the heart in 5 out of 26, in the brain tissue in 2 out of 5 cases, in the mucous membrane of the stomach in 3 cases, and often in the mesenteric, cervical, and bronchial lymphatic glands.

As a rule, the bacilli are only found in these situations in small numbers, and their occurrence here should not be considered as in any way tending to disprove the idea that diphtheria is essentially a toxemia. The bacilli must be considered as gaining admission to the circulating blood, in a certain sense, accidentally.

As a contribution to these subjects in the bacteriology of diphtheria, the results of the examination of nine autopsies on diphtheria cases performed at the Boston City Hospital since January 1st are here reported.

These were all uncomplicated cases of diphtheria, in which antitoxin had been administered.

The method of examination consisted in making cultures on coagulated blood-serum "slants" (Löffler's mixture) from the lung, liver, spleen, kidney and the blood of the heart. In all of the cases the bacillus diphtheriæ was found post-mortem in cultures from the respiratory tract.

In eight of the nine cases of uncomplicated diphtheria to which antitoxin had been given, the bacteriological examination at the autopsy showed a more or less well-marked invasion of the blood by the pyogenic cocci. The results in detail are as follows: In five cases the streptococcus was found in the liver, spleen, kidney and the blood of the heart; in one case in the kidney and blood of the heart; and in one case in the spleen. The pneumococcus (micrococcus lanceolatus) was found only infrequently, it being observed in two cases in the kidney, in one of which the streptococcus was also found in the spleen. In the cultures from one case the only organism present was the bacillus coli communis.

In the lungs of all these cases were found the bacillus diphtheriæ, streptococci, pneumococci, and the staphylococcus pyogenes aureus, either alone or in various combinations.

The presence of the organisms mentioned above in the various viscera enables us to better understand the fatal issue in spite of the antitoxin given; for this agent, as stated above, cannot be assumed to act against any other organism than the bacillus diphtheriæ.

Welch[12] has lately published the statistics of 7,166 cases of diphtheria treated by antitoxin, in which the percentage of fatal cases was only 17. In 2,276 cases in which this remedy was not used, he found the fatality to be 42 per cent.

He considers anti-diphtheritic serum a specific curative agent for diphtheria, and shows that if antitoxin be given during the first three days of the attack, the fatality is much less than in cases in which the serum is given later in the disease.

He also thinks that this serum may prevent the development of secondary infections, and that the failure of antitoxin to cure may at times be due to the presence of other complicating bacteria.

Assuming, therefore, beyond peradventure, the efficacy of this remedy, the importance of its early and thorough administration cannot be overestimated, for by this means the dangers of secondary infection may not only be lessened, but if this condition be present, the system may possibly be better prepared to overcome the ill effects of the various complicating bacteria present in the body.

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[1] From the Pathological Laboratory of the Boston City Hospital.

[2] Archives de méd. expérim., 1891, No. 3.

[3] Jahrbuch f. Kinderheilkunde, xxxviii, 1894, Heft 2 und 3.

[4] Boston Medical and Surgical Journal, March 21, 28 and April 4, 1895.

[5] Centralblatt f. innere Medizin, xvi, 1895, No. 3.

[6] Centralblatt f. allg. Path. und path. Anatom., Bd. vi, No. 3.

[7] Zeitschrift f. Hygiene, Bd. xiii, 1893.

[8] Wiener klin. Woch., 1889.

[9] Schmidt's Jahresbericht, Bd. 237, Heft 1.

[10] Archives of Pediatrics vol. x, 1893.

[11] Zeitschrift f. Hygiene, xviii, 1.

[12] Johns Hopkins Hospital Bulletin, Nos. 52-53, July and August, 1895.

As to the occurrence of the bacillus diphtheriæ in the internal organs in these nine cases, it cannot be said that it has been met with any less frequently than in other cases which have come to autopsy at the City Hospital, and which are referred to above. In these antitoxin cases it has been found in the kidney in four cases, and once in the heart and spleen respectively.

◆

CLINICAL EXPERIENCE IN ABDOMINAL SURGERY AT THE MASSACHUSETTS GENERAL HOSPITAL.

BY J. COLLINS WARREN, M.D.

(Continued from No. 23, p. 559.)

Pyosalpinx, Tubercular Peritonitis, Laparotomy, Recovery. — This girl, twenty years of age and unmarried, entered January 16, 1894, in a very weak and debilitated condition. Her symptoms she dates from last May, when she had a sharp pain in the lower abdomen during the first day of menstruation. This pain returned with succeeding periods until October, since which time she has not flowed. Her first catamenia was at fifteen; then to sea-bathing she ascribes amenorrhea for three months. Since then she has been fairly regular. Ten weeks ago very severe pain in hips and back, not at menstrual time. The pain was ushered in with a chill and vomiting. The chills recurred, and she has been in bed for seven weeks.

On physical examination nothing but tenderness could be made out to right of uterus. As the temperature continued high, it was decided to operate.

January 26th, in the Trendelenburg position, a four-inch median incision below the umbilicus showed the omentum and intestines to be adherent to the abdominal parietes. The intestines were glued together and covered with minute tubercles, a small amount of hemorrhagic fluid escaped. A localized abscess cavity was found in the right pelvis. In this cavity was the thickened and tortuous right Fallopian tube, which was tied close to the uterus and removed. The cavity was then sponged and packed with iodoform gauze, and the external wound was dressed with aseptic gauze.

There was considerable shock after the operation. For several days there was a very free purulent and fecal discharge. The wound was treated with irrigations of corrosive sublimate (1 to 10,000), and later with sulpho-napthol and styrone. Recovery was rather slow, and on March 12th she was sent to the Convalescent Home to recuperate her strength. The sinuses were still discharging, but there was marked improvement in her general condition.

Patient gained in health and strength until the autumn of 1894. After that she failed slowly, and died January 23, 1895.

OÖPHORECTOMY.

There were in all seven cases of oöphorectomy, with no deaths. One was for fibroid tumor of the uterus, already reported. One was for neurasthenia and dysmenorrhea; in this case the report, eight months later was, "Health still poor." In another case a small ventral hernia was reported eight months later. Three cases are selected for this report, as having special points of interest.

Dermoid Tumor of Ovary, Laparotomy, Recovery. — E. H., married, aged fifty-seven years, entered the hospital December 17, 1893. In May, 1893, she experienced a sharp pain in the lower abdomen just above the symphysis, with a frequent desire to micturate. This lasted a few hours. In June she had another attack, which to a certain extent has persisted. Climacteric eight years ago. Constipated. She is well developed and nourished. To the left of the uterus is a tumor the size of orange. Not tender.

Operation in Trendelenburg position. A four-inch median abdominal incision disclosed a tumor of the left ovary, connected to the uterus by a small pedicle which included the tube. With the trocar about six ounces of thick gelatinous matter was evacuated, and the tumor was removed. Abdominal wound closed.

Uneventful recovery. One month from operation she was discharged well.

On opening the cyst after removal, it was found to contain hair, a tooth and adipose tissue — a true teratoma. A portrait of this tumor may be seen on page 750 of my "Surgical Pathology."

Extra-Uterine Pregnancy (?), Ovarian Cyst, Laparotomy, Appendectomy, Recovery. — The patient, a married woman of forty-three years, entered the hospital December 27, 1893. For six years she has had a dragging-down sensation — uterine. For two years "nervous prostration." Six years ago she bore a child, and one year ago she miscarried at three months. Three months ago she considered herself one month pregnant, although catamenia had appeared. She had a sudden severe pain above and to right of umbilicus. Has lost flesh and strength. Feels better when standing. Appetite good. By vagina a cyst can be felt in posterior cul-de-sac.

Operation was performed January 5, 1894, in the Trendelenburg position. A five-inch median incision was made. A cyst, the size of a lemon, occupied the position of the left ovary, and the left Fallopian tube was dilated to the size of a walnut. From this dilated part, which was about an inch from the uterus, escaped what was apparently a large clot. No fetal structures were observed. The tube and cyst were removed close to the uterus. The uterus contained three or four small mural fibroids which were not disturbed. The appendix vermiformis was accidentally exposed during the operation, and was found to contain several concretions, and was ligatured and removed. The abdominal wound was closed.

On the eighth day the stitches were removed. The patient made an absolutely uneventful recovery, and was discharged on the twenty-sixth day.

August 6, 1895. Patient reports herself in good health. The catamenia have been regular as "clockwork" since the operation. There is no hernia.

Retention Cyst of Ovary, Ovariotomy and Ventral Fixation, Recovery. — Single, twenty years old. Entered February 9, 1894. When nine years old sustained injury to lower spine from fall, necessitating cushioned seat ever since. Suffers from backache, etc. Catamenia began at thirteen, never regular. Three years ago again fell; symptoms aggravated. Douching and packing for six months without relief. Two years ago pain in epigastrium; dull at first, then sharp, accompanied by nausea and vomiting; chill, with temperature 104°. In bed two weeks. Trouble with micturition; bearing-down pains, not at menstrual period. Several attacks of epigastric pain, becoming abdominal and lasting two days. Four weeks ago an attack was followed by severe rectal pain. Said to have had *la grippe*. One week later passed pus by rectum. At that time "bunch" felt in rectum, and thinks fistula (recto-vaginal) existed. Invalid for years.

Physical examination showed the uterus sharply retroflexed and bound by adhesions. There was some tenderness in the right posterior cul-de-sac with a small indistinct convoluted mass.

February 21st, in Trendelenburg position, the abdominal cavity was opened by a five-inch median incision. The adhesions of the uterus were freed, and the right tube and ovary, enlarged, cystic, and with a hematoma in the ovary, were ligatured with silk, and removed one inch from the uterus. The uterus was then sutured to the anterior abdominal wall with buried silkworm-gut and the external wound closed with the same material. A dry sterile dressing and swathe were applied.

After the operation, for a day or two there was considerable pain and some vomiting, requiring nutrient enemata. The wound healed by first intention, and she made a good convalescence, being discharged on the twenty-fourth day.

July, 1895. Has had some attacks of pain since discharge. Now gaining and doing well. Gain not so marked or rapid as hoped for. No examination of uterus has been made

SUPRAPUBIC CYSTOTOMY.

Suprapubic Cystotomy for Cystitis.— J. J. K., aged forty, born in Cape Breton and living in Wakefield, entered the hospital December 16, 1893. Seven months before he had been divulsed for strictures. At that time no stone was found. Sounds have been passed since about twice a week. About a fortnight after leaving the hospital he began to pass blood, which has increased steadily in amount. There has been also an increasing dull, steady pain in the bladder. Micturition has been very frequent. For five weeks gravel has been passed.

Examination showed considerable pallor. There were four strictures of the penile urethra admitting a No. 20 F. bougie, and one of the membranous through which a searcher could easily be passed. No stone was found, but a roughness was felt on the left side of the neck of the bladder. An examination of the urine, December 19th, showed the presence of blood, triple-phosphates and urate of ammonia and cells from neck of bladder. No cells indicative of morbid growth, alkaline, 1029.

January 3, 1894. Blood has been passed constantly, and with great tenesmus. A cystoscopic examination was made, and a mass on the left side near the neck of the bladder was seen projecting from the bladder wall, and covered with a white phosphatic deposit. There were shreds hanging from this mass, and from the bladder wall, which was everywhere hyperemic.

January 8, 1894. With the patient in the Trendelenburg posture the bladder was filled with warm water and the rectum was distended with a colpeurynter. A vertical cut, three inches long, was then made into the prevesical space. The bladder was exposed, seized with tenacula, and opened by a cut an inch and a half long. No new growth was found, but the bladder was seen to be covered with phosphatic crystals and the projecting mass seen with the aid of the cystoscope proved to be a fold of the bladder wall. The bladder was drained with two rubber tubes and gauze, inserted through the wound.

No infiltration occurred. The wound had closed by March 17th, about nine weeks after operation, and micturition was normal in every way. He was discharged well, April, 1895.

SARCOMA OF ABDOMINAL WALL.

Fibro-Sarcoma of Abdominal Wall, Excision, Recovery.— E. M., aged thirty-three, married, born in Ireland and living in Cambridge, entered the hospital January 4, 1894. Her family and previous history negative. A year and four months before, she noticed a lump about the size of a hen's egg in the right side, neither painful nor tender. This has gradually increased in size till it now causes much inconvenience in moving and in adjusting clothes. There has been no loss of flesh or strength.

Examination showed the woman well developed and nourished. Presents in right iliac fossa a rounded, not nodulated, dull tumor, the size of a child's head. The skin not adherent. No redness. The tumor was movable except when fixed by flexion of the thigh.

January 10th. By an elliptical incision, seven inches long, at the under and outer margin of the tumor, it was shelled out from its attachments by blunt dissection. It sprang apparently from the fascia of the internal oblique muscle. The peritoneum was not opened. The different muscular layers were united with interrupted silk sutures, and the skin with silkworm-gut.

January 31st. Has healed by first intention. Discharged well.

Tumor pronounced by Dr. Whitney to be fibro-sarcoma.

August 15, 1895. Patient reports that there is no return of the disease nor any appearance of hernia, and that she is quite well.

VENTRAL FIXATION.

Procidentia Uteri, Ventral Fixation, Recovery.— A widow, forty-five years old, entered November 3, 1894. Three months ago, while working, sustained a sudden prolapse of uterus, which she tried ineffectually to reduce. Nothing has been done for it, and on entrance the entire uterus was found protruding. It was enlarged, and there was a foul odor and considerable discharge flowing from many excoriations. The cervix was torn, and there were friction abrasions about vaginal wall and vulva, and a small abscess in the perineal body from which pus flowed. The prolapse was reduced without ether, and the patient was put to bed.

After a prolonged local treatment, employed for the purpose of diminishing the size of the uterus and relieving an endometritis, on November 30th, having gained strength, the uterus was thoroughly curetted and packed with iodoform gauze. The organ, which was retroverted and retroflexed, was propped up by gauze in the posterior cul-de-sac.

On December 6th she was etherized, and the abdominal cavity opened. The uterus was drawn up from the pelvis and fastened by three silk sutures to the anterior abdominal wall. The wound healed by first intention, and the patient made an uneventful recovery.

On January 3, 1895, with the uterus in excellent position in all postures, a supporter was fitted, and she was discharged well, twenty-eight days after the operation.

August 29, 1895. Uterus remains in place. The patient can feel a slight sagging when working very hard. It has never appeared at the vulva since the operation. Feels better than she has for a long time, and is able to do a hard day's work.

Retroversion of Uterus, Ventral Fixation, Recovery.—A. E., age twenty, single, entered December 14,1895. Two years ago she began to masturbate, and four or five days after the first attempt she had her first epileptic attack. She was observed in the hospital, and had one attack before operation. The uterus was found retroverted and freely movable, at other times antroverted. It was curetted, and the posterior cul-de-sac packed. Pessary caused too much discomfort, and packing did not relieve. Had other attacks which Dr. Walton considered true epilepsy and advised removal of possible reflex causes. It was therefore decided to perform ventral fixation to prevent the great freedom of displacement of the uterus.

On January 9, 1895, the abdomen was opened by a median incision, and the uterus sutured to the parietes by three silk stitches. The wound was closed in layers, and a dry sterile dressing applied.

Had an attack after the operation. Later had much pain in left iliac region, running into thigh, with tenesmus and symptoms of pressure upon rectum. Vaginal examination reveals a firm, regular, tender mass in the posterior cul-de-sac. Uterus in place; no leucocytosis; probably a hematoma. The wound had closed by first intention. Flaxseed poultices and hot vaginal douches were given with relief.

After this she made a good recovery; and February 16, 1895, five weeks after the operation, she left the hospital greatly relieved.

August 29, 1895. No relief to epilepsy. Habits and mental condition not improved. Considerable leucorrhea. Uterus in good position.

The following is a list of the cases treated:

	Cases.	Recov.	Deaths.
Appendicitis, acute	15	13	2
Appendicitis, recurrent . . .	3	3	..
Cholecystotomy.	2	1	1
Cystotomy, suprapubic . . .	1	1	..
Exploratory laparotomy . .	6	5	1
Radical cure of hernia . . .	10	10	..
Hysterectomy	4	3	1
Hysteroraphy	1	1	..
Intestinal obstruction . . .	3	2	1
Nephrolithotomy	1	1	..
Oöphorectomy	7	7	..
Salpingitis, purulent . . .	11	10	1
Sarcoma of abdominal wall . .	1	1	..
Ventral fixation	2	2	..
	67	60	7

Total mortality, 10.4 per cent.

In analyzing the causes of death, we find in the case of appendicitis one death due to delay in the operation. In the case of cholydochotomy the necrosis of liver was due possibly to injury during the process of manipulation of the duct. It is not rare for a case to fail and die with persistent vomiting, after operation on the gall bladder, without assignable cause. In the present case the sepsis found about the duct was probably merely an accompaniment of the final hours of a fatal illness. The absence of all sepsis until the last moment is suggestive of this sequence of events. The death following an exploratory laparotomy was in no way due to the operation, which was resorted to as the only hope for a desperate case. In the fatal case of hysterectomy death was due to hemorrhage; clearly a preventable cause. The case of death following a Littré operation was that of a patient exhausted by malignant disease and a chronic obstruction. The operation probably hastened death but a day or two. The death from salpingitis was one which could hardly be attributable to the operation, as that was not resorted to until all other means had failed to restore the strength of the patient to the living point. Leaving out these cases in which the operation does not appear to have contributed to the fatal result, there remain but three cases in which death may have been said to be due to the treatment.

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SYPHILITIC WARTS.

BY JAMES E. FREE, M.D., BILLINGS, MONTANA.

THE civilization peculiar to the brand-new West, is responsible for different kinds of venereal diseases. Fifty prostitutes in a town of twenty-five hundred inhabitants insures a constant supply of gonococci and also numerous cases of syphilis. Prostitutes make a business of examining candidates for bedfellowship. A prevalent opinion, especially among philanthropists, is that the Indian squaw is a model of chastity. God spare the model! Even some of the girls who have been to the schools on the Atlantic coast are common property for white men. What their habits with the bucks are is not known, but many white devils contract venereal diseases from the "blankets."

Syphilitic warts are recognized by the fraternity as dangerous, and consequently the pimps, tin-horn gamblers, and hangers-on are anxious for treatment as soon as such lesions show themselves. The wart is usually within a radius of a few inches of the genitals, although any situation, where heat and moisture are retained, may be infected; such for instance as the commissures of the lips, between the toes, in the axilla or on the nose. They are very contagious. Contagious surfaces like the scrotum and thigh are likely to infect each other. The warts have a stale, flat, unprofitable odor, which is recognized by the bystander sooner than by the proprietor. There is a sort of eczematous ooze from the surface of the wart. Rapid proliferation of tissue is probably caused in the first place by the irritant effect of syphilitic poison to the peripheral nerve terminals. This neuritis brings a quantity of blood to the spot. The layers of the skin are engorged and distended. It is easier to attract the blood than to dispose of it. Efforts to make room for this blood causes the new growth to hypertrophy. Bleeding from the wart is a common accident of no particular significance. It only shows that the heart exerts power enough to break through the spongy barriers which the wart has constructed between it and the outer world. Blood with secondary syphilis in it does not possess the elements in condition to do normal constructive work. The discharge is caused by the squeezing through this mass of illy-organized tissue of the watery constituents of the blood. Blood in the wart is semi-stagnant. It is, therefore, a splendid place for degeneration and necrosis, which explains the fetid smell.

The chancre is the step-brother of the syphilitic wart. Both are illegitimate children. The chancre has the appearance of being caused by a powerful escharotic. First of all there must be a solution of continuity in the tissue. A nerve filament is irritated. It is such an insignificant process that it escapes notice, but it extends and involves other terminals. They become infiltrated and indurated. Function is disturbed. The small circle of tissue which these nerve filaments supply with impulses begins to suffer. Blood-vessels become dilated because of inhibition of vaso-motor control. The syphilitic virus here comes into contact with the blood, which finds difficulty in escaping from the inflamed patch, owing to interrupted connection with the central nervous mechanism. Nature takes alarm and hurries her forces to the rescue. She tries to build a wall of fibrinous deposit between the infected spot and surrounding structures. The chancre usually has its boundary line as well marked as a spot of gangrene. Before the inflammatory action has gone very far, the syphilitic poison has entered the general system, so that nature's prophylactic measures are of no avail. By the end of a month every fibre of the body has been invaded. The peripheral nerves seem to suffer first and most severely. This is probably due to the delicacy of their construction and function. The contaminated blood penetrates the cells, and introduces the poison into the sentient structure inside of the sheath. A general rebellion of the network of peripheral nerves follows, which is the syphilitic rash. This rash probably comes out on the mucous surfaces, especially on the gastric and intestinal membranes, and here is the key to the digestive disturbances, the malaise and headache. In the aggregate the inflammatory process is sufficiently widespread to explain the high temperature. The increased heat of the body lasts long enough to effect a chemical alteration in the syphilitic poison, which in the future expends its virulence on the deeper structures. All the exanthemata have the same predilection for the surface of the body at the commencement of their course. Variola makes the most vicious attack, and is met by the stubbornest resistance. Each exanthem is girdled, and the blood-supply shut off. Necrosis and exfoliation is the result.

In the woman, syphilitic warts have the appearance of being much more serious than in the man, owing to the fact that the moist tissue which shades insensibly from mucous membrane to skin, is so abundant. And it is on this half-breed space that this vegetating parasite thrives best. Speedy relief is always demanded, and the victim is sure her last conquest is to blame. Nearly all the sufferers are alcoholic inebriates. It is possible that the irritating effect of alcohol, combined with its stimulant property, will explain the birth of the wart.

Caustics locally, and mercury internally, seems to be the usual order of treatment. An escharotic acts by causing an albuminous deposit in and on the growth. The albumin clogs every orifice and produces induration and edema. It interferes with every function of the structure and arrests circulation. Without blood to maintain life, the tissue dies and sloughs off. Removal by this method leaves a scar.

Another method advocated by Dumesnil, of St. Louis, consists of bathing the surface with a bichloride solution, drying it, and then dusting calomel in large quantity upon the mass. The antiseptic quality of the bichloride kills the virus that is within reach. It also exerts an astringent effect. Calomel dries up the once moist surface. It was the escaping secretion which kept the wart alive and growing. When it fails, growth ceases. The process of disappearance usually begins at the outside. What circulation there is in the wart begins to contract in area. This diminishes the distention. The wart has no organized nerve supply, but may be tender because it makes trouble for the nervous apparatus directly beneath it. When there is no longer an outlet for the mucoid secretion, there is probably a coagulation of the constituents inside the area covered by the calomel. This process soon obliterates the lumen of the capillaries of the wart. Finding its occupation and its nourishment gone, the wart gives up the ghost, and a rejuvenated surface comes into view.

Another method of dealing with the warts is by injecting a ten-per-cent. solution of cocaine. Cocaine is a caustic. An injection sets up an inflammatory disturbance around the base of the wart. Fibrinous exudation takes place and disorganizes the circulation. The arrangement by which the blood-vessels of the skin have been tapped to supply the wart nourishment, can be imagined to resemble a narrow neck, communicating with a big bottle. When the bottle is full it cannot be emptied fast enough. The pressure of the heart has more effect on the elastic tissue than in forcing the blood into the venous channels. An inflammation of the tissues beneath the wart means starvation for it. A severe phlogistic process may make the wart have a shrivelled, bloodless look in short order, but usually the disappearance occurs gradually.

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Clinical Department.

CASES OF INTEREST FROM THE SUMMER GYNECOLOGICAL SERVICE AT THE BOSTON CITY HOSPITAL.[1]

BY JOHN G. BLAKE, M.D.

THE following cases selected from the summer service of the City Hospital are thought to be of sufficient interest to report to this Society.

They comprise a death following Alexander's operation; death from pulmonary embolism resulting from thrombosis in the iliac vein, and that following induced abortion five months before; two cases of malignant disease of the uterus and vagina of a very rare form; recovery after laparotomy in advanced pregnancy, followed by premature labor at sixth month, placenta previa, profuse hemorrhage, instrumental delivery and rapid restoration of health; and a case of tubercular disease with large distention of tubes without symptoms and with a markedly displaced and adherent uterus. The histories of these cases are from the hospital records.

STERILITY: ALEXANDER OPERATION, DILATING AND CURETTING, DEATH.

D. G., aged thirty-one. Married three years. No children. Entered Gynecological Service June 10, 1895. Had had leucorrhea for four or five years. Menstruation irregular, with considerable pain during the first day, sometimes being confined to bed.

Physical examination. Uterus retroverted in marked degree. Sound enters to a depth of three inches. A moderate amount of uterine discharge.

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[1] Read before the Obstetrical Society of Boston, October 12, 1895.

Operation. Ether. Dr. Blake. June 13th. The uterus was dilated, curetted, and packed with iodoform gauze. Uterus was replaced, and a hard rubber pessary inserted to hold it in position. Alexander's operation was then performed. On the left side a careful search for the round ligament was unsuccessful. On the right the ligament was easily found, and secured in the usual manner. A search was again made on the left side, but without success. The incisions were carefully cleansed with corrosive, superfluous fat removed, and edges approximated by means of deep silkworm-gut and intermediate silk sutures. Wounds were dressed with iodoform gauze and collodion.

June 14th, A. M. Since operation there has been considerable pain in the abdomen, which is swollen, tympanitic and very sensitive to touch. Patient vomited several times during the night and this morning. In the afternoon the gauze was removed from the uterus. Corrosive douche given. Wounds inspected. About the incision on the left side there is a slight duskiness and slight swelling. Patient seen by Dr. Blake this afternoon and the diagnosis of acute peritonitis was made. Patient is very sick; tenderness and tympanites are increased; face flushed.

During the afternoon and evening patient grew rapidly worse; the pulse could not be counted. Patient did not respond to treatment, and died at 9.30 P. M. All efforts to obtain an autopsy were unsuccessful.

PULMONARY EMBOLISM.

This was caused by thrombus of the iliac vein, the result of induced abortion five months before.

D. W., aged twenty, entered the hospital June 15, 1895. Her complaint was flowing for six weeks, due to induced abortion. Her mother and father died of phthisis. In December, 1894, when two and a half months pregnant, abortion was induced by insertion of a catheter into the uterus. Flowing insued, and continued for three weeks. For the next three months her catamenial flow, previously of moderate amount and duration, continued but one day at each period. She has had very much abdominal pain and has lost flesh. Six weeks ago profuse flowing began, characterized by large clots at first, and, with one brief remission has continued. During most of the time the odor has been foul.

Examination revealed the uterus reaching to two inches above the umbilicus, and very movable. From the patulous os uteri exuded a profuse muco-sanguineous discharge containing small shreds of tissue and with a somewhat foul odor. Depth of uterus five inches.

On the next day the uterus was curetted under ether, and a considerable amount of *débris* removed. Profuse hemorrhage was checked by a hot intrauterine douche of corrosive sublimate, and the uterine cavity packed with iodoform gauze. Its depth had now decreased by an inch. Stimulants and ergot were administered. She made a good recovery from ether. The uterus was douched each day after this.

Two days after the operation excessive pain and tenderness developed in the right inguinal region, but disappeared during the next week. Although very anemic-looking, she seemed gradually to improve until July 4th, when her temperature suddenly rose to 103°. The depth of the uterus was then three and a half inches, and the appendages apparently were normal. Four days later her temperature was 99°, and she showed such marked improvement that by July 11th she sat up for a little while.

On the morning of July 14th, one month after the operation, she had symptoms of collapse; her temperature fell to 96.8°, and her pulse rose to 140. Respiration was shallow and very rapid. She had no pain, but complained of terrible distress. As the stomach rejected everything, stimulants and nourishment were administered by the rectum. She improved very slightly under stimulation. Dr. Williams saw her, and found dulness at upper lobe and apex of right lung. The dyspnea became more distressing. She failed rapidly, and died that evening (July 14th) after being comatose for four hours. Diagnosis of pulmonary embolism made by Dr. Blake.

Dr. Draper performed the autopsy, at which the following lesions were found:

There was marked anemia of all the organs. Both pulmonary arteries contained large firm thrombi, that of the right being of the size of a man's thumb. There was pulmonary edema and a pneumonia of the right upper lobe, probably of septic origin. The spleen was enlarged, and the kidney contained a small purulent focus. There was a general peritonitis of very recent origin, as evidenced by the extreme delicacy of the adhesions, and an old pelvic peritonitis with very dense adhesions. Both tubes were enlarged and full of pus, the left having apparently ruptured. The uterus was three inches long, and although the canal contained some pus its mucous lining was apparently healthy. There was a thrombus fully eight inches long in the right internal iliac vein, and this was evidently the source of the pulmonary embolism. The head was not opened.

LAPAROTOMY FOR SUPPOSED EXTRA-UTERINE PREGNANCY; PLACENTA PREVIA; DIFFICULT LABOR; RECOVERY.

A. M., twenty-six years old, married six months, a native of New Brunswick, entered July 8, 1895. She considers herself pregnant, her last menstruation being February 28, 1895. For five days she has had pains in the lower abdomen. Seven years ago she had a premature delivery at eight months attended by convulsions. For the past two years she has had a very profuse leucorrheal discharge. She is habitually constipated, and her general condition seems to be not very good. On entrance she had a pulse of 114 and a temperature of 100.2° F. For five days she has had a steady pain across the lower abdomen, never very distinctly localized, but more severe in the left inguinal region, and accompanied by bloating. No cause can be assigned for these pains by the patient. She has had no movement of the bowels in the past five days. The pain has grown constantly worse, and she has had severe vomiting.

Examination showed a swelling to the right of the median line of the abdomen, of about the size of a fetal head. This possibly is a uterine pregnancy of the fifth month. To the left of the median line, in the region of the spleen, is a swelling much smaller than the first. There is marked tenderness over both swellings, more pronounced over the left. Digital examination finds a bilaterally lacerated cervix very deep in the pelvis, more or less to the right and the os very patulous. No evidence of peri-uterine inflammation found. The patient's general condition and abdominal tenderness suggest a possible peritonitis, with the nature of the swelling in the splenic region in doubt, but with a strong suspicion of extra-uterine pregnancy.

The patient was seen in consultation by Dr. Watson, who advised immediate transfer to the surgical side, where he operated.

By a median incision he exposed the normally developed uterus five months pregnant. An incision was then made in the left linea semilunaris over the tumor in that region, which proved to be the left Fallopian tube and ovary, with an extravasation of blood into the broad ligament of the size of a small cocoanut. The tube was bent upon itself in such a manner that the fimbriated extremity of the tube and the ovary were adherent to the uterine portion of the tube. The latter, constituting the pedicle of the tumor was somewhat longer than the thumb, and twisted upon itself. The outer part of the tumor was considerably dilated. The middle portion contained from ten to twelve ounces of bloody fluid, and lay just below the left kidney. There were some dense adhesions to the sigmoid flexure, which were tied and cut, others being separated by the fingers. The tumor was removed close to the uterus.

The pathologist reports the clot to be simply blood, and the other to be a hemorrhagic cyst of the ovary.

After the operation the patient did pretty well for four weeks. She had considerable pain partially relieved by catharsis. A stitch abscess developed, burrowed in the abdominal walls, and under primary anesthesia was laid open and drained. This relieved the pain. The next day she had first a slight bleeding and then an alarming hemorrhage from the vagina. This was August 12th. A diagnosis of placenta previa was made. The placenta was separated, and a fetus of about six months' development was delivered by Dr. Blake with the aid of a pair of Simpson's forceps. The patient's condition after this required salt solution and stimulants. She made a good recovery; the lochia ceased in two weeks, and in sixteen days after the delivery she was sitting up.

The above only faintly describes the difficulty attending delivery. An unyielding os, constant hemorrhage, a placenta to separate before reaching the fetus, an almost exhausted patient and unsuitable instruments, made a combination of difficulties which are not entirely unknown to members of this Society.

GIANT-CELL SARCOMA OF UTERUS AND VAGINA.

Two cases of sarcoma uteri are mainly of pathological importance and interest.

The first, the one where no autopsy could be obtained, claimed to have been well until a year ago. Age forty, married, no children or miscarriages. Has phthisis and nephritis. Edema of face, ankles and other parts of the body. Cervical and inguinal glands enlarged. Cervix uteri enlarged, reddened, and almost raw in appearance. Behind it a swollen, eroded area of vagina, about twice the size of a ten-cent piece. Both cervix and this elevated patch bled at the slightest touch. Tissue seemed markedly friable. Clinical diagnosis of carcinoma made.

A specimen taken from cervix with Mixter's punch is reported upon by Dr. Councilman as follows: "Malignant. The mucous membrane normal; beneath this there is a small cell infiltration; and next to this, extending as far as section reaches, a homogeneous mass of rather large round, oval or irregular cells with large oval nuclei. Some of the nuclei are tremendous in size, and many bear beautiful kariokynetic figures. A number of giant-cells present. Anatomical diagnosis: giant-cell sarcoma of uterus. This condition is very rare. Growth rapid."

Second case. Patient thin and cachectic, age fifty-eight, married. Menopause about fourteen years ago. Nine children and three or four miscarriages between 1855 and 1866. Entered mainly on account of foul, grayish, vaginal discharge, first noticed nine weeks previous. Examination showed a vagina very much contracted by the cancerous growth, which appeared to have invaded every part. Cervix obliterated. A gray slough noticeable over the entire surface. Odor very foul. Clinical diagnosis of carcinoma made, and a specimen taken with Mixter's punch.

Pathological report: "Malignant. The mucous membrane normal, and beneath this there is a small cell-infiltration, and extending downwards from this a tissue composed of spindle-shaped cells separated at times by a fine fibrous stroma and containing many giant cells, cells with large nuclei and many kariokynetic figures. Spindle giant-cell sarcoma. A very rare tumor. The growth is apparently very rapid."

In both cases illness and pain had developed rapidly. In neither was there hemorrhage at any time. Both had severe diarrhea at times; also incontinence of urine and urethral tenesmus at the last. Mental confusion and delirium at times were present in both from the time of coming under observation. In both the stools were of extremely foul odor. Both were kept comfortable by symptomatic treatment until their death, the first fifteen days after entrance, the second in a month and ten days.

In the second, the anatomical diagnosis, by Dr. Stokes, was as follows: Barrel-shaped chest. Emaciation. Healed tuberculosis of right lung. Emphysema. Chronic diffuse nephritis of granular variety. Remains of kidney infarction. Abscess of both kidneys of the ascending variety from bladder. Acute pyelitis. Acute purulent cystitis. Thrombosis of superior mesenteric artery, with embolism of finer branches. Beginning gangrene of ileum. Chronic endarteritis of aorta. Primary sarcoma of vagina including uterus and surrounding pelvic tissues.[2]

Dr. Councilman has kindly consented to make some remarks on this particular form of disease.

STERILITY.

M. S., aged twenty-eight years, married five years, a native of Ireland, entered Ward S, July 22, 1895, on account of vomiting, pain in legs and bearing-down pains extending over a period of three years. Her family and past personal history are negative. She began to menstruate at thirteen years, and has flowed profusely for eight and nine days at a time, passing clots. The menstrual period has been preceded by a week of pain severe enough to confine her to bed. She has never borne children, but four years ago was prematurely delivered, by some unknown cause, at six or seven months. Her temperature on entrance was 98.4° F., pulse 62. She says that she has always been well and a hard worker. About three or four years ago she began to be troubled by bad headaches and "dry heaving," beginning two weeks before catamenia were due and continuing until the menstrual flow began. She has had no local symptoms whatever.

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[2] Autopsy Records, vol. xix, page 114.

On July 22d Dr. Watson recommended her transfer to the surgical side, for laparotomy, separation of the adhesions and ventro-fixation of the uterus. This was because examination showed a retroversion of the uterus with firm adhesions. She was transferred July 23d, and July 25th Dr. Watson opened abdomen by a median incision. He found both tubes dilated and twisted and curled upon themselves. The uterus was very much retroverted and with the tubes was bound down by very firm adhesions. It being considered best to remove the tubes, this was done with great difficulty. The adhesions were tied off and the tubes removed close to the uterus. The ovarian vessels were ligated and the ovaries left *in situ*. Uterus could not be restored by reason of the firmness of the adhesions. The contents of the tubes were caseous, and Dr. Stokes thinks them undoubtedly tuberculous.

There is no phthisis in her family history. The case is reported simply to show the extent and character of pelvic disease which may exist without giving rise to the slightest distress, unsuspected by patient, and not in any way impairing health. Patient's only object in seeking medical assistance was to be cured of her sterility, which unfortunately we were unable to do.

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A CASE OF PENETRATING WOUND OF THE ABDOMEN AND LARGE INTESTINE.

Abdominal Section. Suture of the Intestine. Recovery.

BY F. C. THAYER, M.D., WATERVILLE, ME.,
Surgeon-General, State of Maine.

Abdominal section for penetrating wounds of the abdomen and intestine is not of such frequent occurrence but that a report of the following case may be of some interest.

July 30, 1895. J. S., age twenty-six years, while at work at an irregular moulder, was struck in the abdomen by a tool thrown from that machine. He walked to a physician's office, fifty rods' distance, and was soon after taken home, where I saw him nearly three hours after the accident.

Evidences of free hemorrhage and shock were manifest. He was extremely pale, no pulse could be felt at the wrist, and altogether the case presented a very wretched outlook. I ordered a normal salt solution enema with whiskey, while I looked at the wound, which was an irregular incision, an inch and one-half long, just above the umbilicus and nearly to the outer border of the right rectus muscle.

It had evidently penetrated the wall, for the omentum was presenting, and I was informed by one of the physicians present that he had already had his finger in the abdominal cavity.

As quickly as proper arrangements could be made (instruments, dressings, sponges, etc., were taken from my office already sterilized), the patient was etherized, and the wound already made was enlarged by an incision three inches in length. The abdomen was full of blood, which welled up through the opening made so as to be well-nigh appalling. A hurried examination of the parts immediately subadjacent to the wound, not revealing the source of the hemorrhage, I began a systematic search for the cause. After a long, persistent, patient exploration, I found the occasion of the bleeding to be a wound of the transverse colon, one and one-half inches from the hepatic flexure, and on its posterior aspect; the wound was an inch and three-quarters in length, and parallel with the axis of the intestine. There was not much extravasation of the contents of the intestine, although some fecal matter was discovered in the region of the wound. The vessels were ligated and the wound of the intestine closed with the Lembert suture, catgut being used for both ligature and suture. The abdominal cavity was then washed out with a hot, normal salt solution, a liberal quantity being used, as it required a good deal of flushing to get rid of the small clots which were present. The cavity being thoroughly dried, the abdominal wound was closed without drainage. Time of operation one hour and ten minutes.

The patient was put to bed, with no pulse at the wrist, and a heart's action of 160, but quite steady. Hot-water bottles were placed about him, and a half-pint of normal salt solution with three ounces of whiskey was given as an enema before he was taken from the table. One-thirtieth of a grain of strychnia was given hypodermically twice during the operation. This was continued every four hours during the night, and the salt solution was repeated every six hours. He vomited more or less during the night, but on the whole, got quite an amount of sleep.

July 31st, 7 A. M. Temperature 97°, no pulse at wrist; heart's action 140 and fairly steady. During the day one-thirtieth of a grain of strychnia was exhibited every four hours; normal salt solution enema were given every six hours, which served materially to relieve the thirst and feeling of prostration. At 9 P. M. the temperature was 99.8°, no pulse; nutrient enema were given and retained.

August 1st. Slept one-third of the time during the night. Temperature at 7 A. M. 99.6°, pulse 118. At 9 A. M., after a salt enema, he passed a good deal of flatus. At 10.45 A. M. had a slight movement of the bowels with considerable flatus. At 4.30 P. M. had a natural movement of the bowels. At 6 P. M. temperature 98.6°, pulse 95.

August 2d. Had a restful night. At 7 A. M. temperature 98.6°, pulse 84. Nutrient enema given every six hours; milk and lime water, in small quantity, taken with good result. At 6 P. M. temperature 99.8°, pulse 80.

August 3d. Took twelve ounces of milk during the night. At 7 A. M. temperature 98.8°, pulse 80. At 12 M. temperature 99.6°, pulse 95. Face flushed; complained of pain in left side. At 3 P. M. temperature 100.6°, pulse 96. At 6 P. M. temperature 101°, pulse 100. One-half Seidlitz powder given at 6.30 P. M., and at 7 P. M. another half. At 7.30 P. M. bowels moved; three watery movements before midnight. Temperature 100°, pulse 88, 12 P. M.

August 4th. At 7 A. M. temperature 99.6°, pulse 88. At 9 A. M. temperature 99.8°. At 12 M. temperature 100°; 4 P. M. temperature 102°. Thinking there must be some trouble about the wound, I removed the dressings and found at its upper part a well-defined cellulitis, undoubtedly occasioned by septic infection introduced at the time of injury or by an unclean finger. The upper stitch being removed, the edges of the wound were pulled apart, and nearly a tablespoonful of pus flowed out. The abscess cavity was washed with a half-saturated solution of boric acid and the wound redressed. At 9 P. M. the temperature had fallen to 100°. He had a comfortable night, and the next morning, August 5th, expressed himself as feeling "first-rate" and wished for something more substantial to eat.

August 6th. At 7 A. M. temperature 99°; wound dressed; stitches removed.

August 7th. On this date an accident occurred, which fortunately did but little more than to frighten nurse and patient. During the night, *while asleep*, he got up and walked around the bed, finding himself standing on the floor when awakened by an outcry made by the nurse when she discovered her patient on his feet at the foot of the bed. No harm was done save a separation of the skin through the whole length of the wound.

The progress of the case from this on was uneventful, save that the temperature did not reach the normal point for three weeks, varying from 99° to 101°. At the end of four weeks he began to sit up a little, and was discharged in five weeks from the occurrence of the injury. He is now perfectly well, attending to his usual work.

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A CASE OF SPONTANEOUS RUPTURE OF THE UTERUS.[1]

BY CHARLES W. TOWNSEND, M.D.

MRS. M., thirty-two years old, an out-patient of the Boston Lying-in Hospital, was first seen by me September 2, 1895, at one A. M., and the following history obtained from the hospital attendant. Her previous seven labors were all normal and all short except the last, which lasted nineteen hours. No instruments used.

The present labor began at six in the evening September 1st, and the os was fully dilated by ten o'clock; and fifteen minutes later the head in O. L. A. position had descended to the perineum. After waiting two hours, as the child was not born, the attendant prepared to send for the out-patient house-officer. While writing the note the woman suddenly exclaimed, "Doctor, quick! The child is moving. It's coming up my throat." Shortly after she complained of an agonizing, burning pain in the left hypochondrium, and said that her labor pains had left her. She also called to be fanned and to have the windows open, and became blanched. She vomited two or three times. An examination immediately after the first outcry showed that the head had receded nearly out of reach, and for the first time there was a discharge of blood from the vagina. The diagnosis of rupture of the uterus with internal hemorrhage was clear, and the out-patient physician so telephoned to me.

The patient, an enormously fat women with a hugh abdomen, was in a small attic room, very filthy and devoid of common necessities. Her condition was one of profound collapse with rapid, thready, irregular pulse, lips almost white, and gasping respiration. To carry her in that condition with a ruptured uterus down the steep, narrow stairs to a hospital seemed certain death, and laparotomy under the condition of the patient and with her surroundings seemed to both Dr. Haven, who came to my assistance, and to myself to be equally hopeless.

Immediate delivery through the vulva was the only alternative. On attempting to pass a catheter it was found to go in through the urethra but to come out into the vagina, about two inches up through a broad transverse rent. Forceps with Reynolds's axis-traction rods were applied, but the head would not come down. Craniotomy at this point would have been the proper operation, but this was not done as it was not definitely known whether the child was alive or not, and objections to a destructive operation had been made. The forceps slipped, and on attempting to reapply them, the head receded, so that the examining arm was inserted nearly to the elbow in order to reach it. Forceps were then clearly out of the question, and nothing was left but to turn the child already wholly in the abdominal cavity and deliver by the feet. The cord was found to be pulseless. The turning was easy, but the extraction, owing to the very large size of the child, was difficult. The child was dead, and was found by tested scales to weigh thirteen pounds. The placenta was free in the abdominal cavity, and was extracted together with large, dark clots.

The woman was by this time pulseless, but reacted after an intravenous injection of a pint of salt solution (given by the out-patient house physician, Dr. Chute) and hypodermic injections of brandy and strychnine. Ergot was also given hypodermically. The uterus contracted well and there was scarcely any external hemorrhage.

The patient reacted well; her pulse returned at the wrist, and after twenty-four hours there seemed to be some chance of a spontaneous recovery. Vomiting was a distressing symptom, and her abdomen became distended. The urine appeared to be passed normally. Her temperature, 102° twelve hours after delivery, returned to normal the next day, and varied between normal and 101° till her death. The pulse fell to 100 the morning after delivery, but soon went up to 120 and 130, and was always of very poor strength. The patient died suddenly at the beginning of the fourth day.

The externe, Mr. A. N. Broughton, deserves much credit for his devoted attention to the patient throughout the case.

As there had been reports of violent treatment by the husband just before the labor, an autopsy was made by Dr. George Stedman. There was no evidence of violence. The body of the uterus was large; close to the vaginal junction was a large transverse rent, involving the vagina and a portion of the bladder. The intestines were blown up with gas, and showed in places beginning peritonitis. The heart was in an extreme state of fatty degeneration.

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Medical Progress.

REPORT ON DISEASES OF CHILDREN.

BY T. M. ROTCH, M.D., AND A. H. WENTWORTH, M.D.

INTRA-UTERINE INFECTION WITH TYPHOID FEVER.[1]

FREUND and Levy report the case of a mother, twenty-four years old, a multipara, who contracted typhoid fever in the fifth month of her pregnancy. This caused a miscarriage in the fourth week of the disease. The labor was conducted under strict antiseptic precautions. The autopsy and bacteriological examination of the fetus were made twenty minutes after delivery.

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[1] Read before the Obstetrical Society of Boston, October 12, 1895.

[1] Freund and Levy: Berl. klin. Woch., 1895, No. 25; Revue Mens. des Maladies de l'Enfance, November, 1895.

Cultures were made from the placenta; also from the spleen, and blood taken from the heart of the infant. The typhoid bacillus was found in all of them. The differential diagnosis between the colon bacillus and the typhoid bacillus was established by culture media and inoculations of animals. Cultures taken from the surface of the placenta and from the vernix caseosa were sterile, which excluded accidental infection.

The pathological lesions consisted of a slight enlargement of the spleen and some increase in the pulp. The Peyer's patches were not ulcerated, and the mucous membrane of the intestine was normal. The authors attributed the absence of specific lesions to the septicemic character of intra-uterine infections in general, and to the fact that the infection did not take place from the intestine.

ICTERUS NEONATORUM: THEORY OF QUINCKE, BY SCHREIBER.[2]

Of all the theories thus far advanced, this of Quincke's is, according to the author, the only one which satisfactorily explains all the facts. This theory attributes the occurrence of icterus chiefly to the persistence of the canal of the ductus venosus (veineaux d'Arantius). Owing to this persistence, the bile pigment absorbed from the surface of the intestine passes into the general circulation instead of being retained in the liver. Several secondary conditions which favor the occurrence of icterus are the abundant production of bile at this time from destruction of red corpuscles; the small amount of urine passed; the richness of the meconium in bile pigment, and the non-transformation in the intestine of bilirubin into urobilin because of the absence of putrefaction in the intestinal contents in the new-born. As for the persistence of the canal, Quincke cites five cases; the author has observed seven cases; and Elsässer found that in 200 infants who died in the first eight days, the canal was closed in 23, and was closed only three times in 78 cases which died very soon after birth.

The author made a number of injection experiments on new-born infants, and found the injected material in the ductus venosus in all cases. The injections were made into the umbilical vein, the portal vein and into the heart.

In another series of experiments the author demonstrated that the blood of the intestines passed into the vena cava by means of the hemorrhoidal veins, without going through the liver. Experiments were also made upon dogs with reference to the absorption of bile pigment from the intestines. The author injected bile into the rectum, in some cases ligating the rectum, in others not, and found in all cases that the urine contained bile pigment, and histologically bile pigment was found in the hemorrhoidal veins.

THE NATURE OF BARLOW'S DISEASE.[3]

Authors still disagree as to the nature of Barlow's disease. Some consider it a manifestation of infantile rhachitis and others regard it as infantile scorbutus. Fürst has collected evidence for and against each of these theories.

(*a*) Reasons why Barlow's disease may be considered a manifestation of hemorrhagic rhachitis:

(1) In the majority of the cases one finds rhachitic modifications of the bones, sometimes manifesting themselves during the disease and at other times already present when the disease begins. Spontaneous fractures and separations of the epiphyses observed in a certain number of cases may also be considered as belonging to the rhachitic diathesis.

(2) The pains in the bones, so frequently present in Barlow's disease, also occur in the beginning of rhachitis at times.

(3) Barlow's disease is especially frequent at an age when rhachitis occurs oftenest.

(4) The clinical symptoms, in so far as the osseous system is concerned, and the anatomical lesions of Barlow's disease are similar to those of rhachitis.

(*b*) Reasons why Barlow's disease may not be considered a manifestation of rhachitis:

(1) Typical cases of Barlow's disease occur with characteristic hemorrhages and subperiosteal hematomata in which the usual evidences of rhachitis are lacking.

(2) Barlow's disease is extremely rare as compared with the frequency of rhachitis.

(3) The tumefaction of the soft parts, the hemorrhagic exudations under the periosteum and in the medullary portions of the bones and in the serous surfaces are not characteristic of rhachitis.

(4) In Barlow's disease the anemia and cachexia are more marked than in rhachitis.

(5) The medical treatment of rhachitis fails to cure Barlow's disease.

(*c*) Reasons why Barlow's disease may be attributed to scorbutus:

(1) The occurrence of hemorrhages in the skin, mucous membranes and muscles in both diseases.

(2) The occurrence of a hyperemic swelling in the gums surrounding the teeth. On the other hand, the manifestations in the gums are not always present in Barlow's disease and the subperiosteal hemorrhages do not occur in *typical* cases of scorbutus (?).

(3) The anemia and cachexia have the same characteristics in both diseases.

(4) The antiscorbutic treatment prevents the infants from having Barlow's disease and cures the disease when it has occurred. The same treatment has no effect upon rhachitis.

(5) Both Barlow's disease and scorbutus occur chiefly in the wet season.

(*d*) Reasons against the scorbutic nature of Barlow's disease.

(1) Barlow's disease is rare and is not found in countries in which scorbutus is frequent.

(2) Barlow's disease is sporadic, whereas scorbutus is endemic among individuals who live in the same defective hygienic conditions.

(3) Barlow's disease is a malady of infancy, whereas scorbutus rarely occurs at this age.

(4) The hemorrhagic gingivitis is a typical symptom of scurvy and is exceptional in Barlow's disease (?) and only then when the infant has teeth.

(5) Barlow's disease is chiefly observed in infants belonging to the better classes, while scorbutus occurs commonly among the poorer classes.

(6) Scorbutus is associated with the absence of

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[2] Freund and Levy: Berl. klin. Woch., 1895, No. 25; Revue Mens. des Maladies de l'Enfance, November, 1895.

[3] Fürst: Loc. cit., No. 18; etc.

vegetables and fresh meats in the alimentation, whereas these two factors are not associated with Barlow's disease.

In analyzing the above facts, Fürst takes the rhachitic view of the etiology of the disease, admitting that the special cachexia, of which the exact nature is unknown, prepares the way for the development of the two affections. Probably a nutritive disturbance which on the one hand affects the vessel walls, and on the other, the osseous system. The localization of the subperiosteal hemorrhages at the junction of the epiphysis and diaphysis of the bone can be explained by the hyperemia occasioned by the active growth of bone at this age and place. Under the influence of certain conditions, which have not been determined, the physiological hyperemia may be changed to an inflammatory process causing the rhachitis to assume (?) a hemorrhagic form.

TAPPING THE VERTEBRAL CANAL.[1]

During the preceding fifteen months Fürbringer has tapped the vertebral canal more than 100 times in 86 cases. The puncture is made in the second, third or fourth intervertebral space in the lumbar part of the spine; the patient sitting up rather than lying on the side. The author states that anesthetics are unnecessary, and that aspiration is more painful than the puncture itself. The needle should penetrate about one centimetre (?) in very young infants and about seven centimetres in adults. The amount of fluid withdrawn may amount to 110 c. c.

Out of 37 cases of tubercular meningitis, of which 27 were verified by autopsy, the tubercle bacillus was not found in seven cases.

Of this 80 per cent. in which the diagnosis was established, there were a number of cases which could not be diagnosticated from the clinical symptoms. The therapeutic results were unsatisfactory.

In three cases of serous meningitis there was a transient amelioration of the symptoms. In one case which presented meningeal symptoms of a foudroyant character the author withdrew "creamy" pus from the canal, and made the diagnosis of cerebro-spinal meningitis, which was verified by the autopsy. In another case, with symptoms of myelitis and pneumonia, a greenish-colored liquid was withdrawn which contained numerous pneumococci. Four times the puncture was made in cases of cerebral tumor. The first gave no result, and the patient was cured by antisyphilitic treatment. In the second case there was temporary relief for a few days. The third case had epileptiform convulsions, and there were changes in the optic disc. The puncture gave relief for a day. The patient died suddenly and the autopsy showed a tumor the size of an apple which could have been easily extirpated. The fourth patient had been trephined without success. The puncture was made later after the symptoms had returned, and was followed by relief for twenty-four hours when he died suddenly.

A. Fränkel, who took part in the discussion, agreed with Fürbringer in general that the operation was harmless if done correctly. The puncture should be made about on the plane of the junction of the superior and middle thirds of a spinous process, about two fingers' breadth from the median line. After passing through the skin the needle should be directed slightly upwards and inwards, and it then enters the canal without difficulty. He failed to find tubercle bacilli in several cases of tubercular meningitis, notably those in which the arachnoid membrane was affected, and therefore the absence of tubercle bacilli is no proof that the disease does not exist.

Heubner has not obtained any more favorable results than the others therapeutically, but even an amelioration of the symptoms for a few hours is desirable. He recommends the puncture of the vertebral canal in preference to the ventricles in chronic hydrocephalus.

At the Children's Hospital, in Boston, several months ago, there was a child two years old who had marked cerebral symptoms. We punctured the spinal canal, using for the purpose the needle from an antitoxin syringe, and withdrew six cubic centimetres of a clear fluid which looked like distilled water. No tubercle bacilli were found in this fluid and only rarely a cell of any kind. The albumin was quantitated and found to be less than one-twentieth of one per cent. Cultures made from the fluid were negative. The child showed marked stupor at the time, and when aroused acted as if blind. Examination of the eyes showed them to be normal. There was an acute, double, sero-purulent otitis media; but although paracentesis was performed and the ears carefully treated, the symptoms persisted. These were moderate temperature of an irregular type; marked irritability when roused; rigidity of extremities, and at times slight retraction of the head; considerable stupor; respiration at times irregular; tongue coated; throat negative; pupils equal, moderately contracted, and reacted slowly to light; pulse rapid (140–180); heart and lungs negative; abdomen moderately distended and tympanitic; urine negative; persistent diarrhea, five to six movements daily, of a green color and more fluid than normal.

Immediately after tapping the canal the child became restless, throwing herself about the bed, clutching at her hair and giving vent to short cries. The pulse rose to over 250 in the minute, the respiration was superficial, and the skin was cool and slightly livid. Subcutaneous injections of brandy and ether were given, heaters applied, and the foot of the bed raised. This condition persisted about the same for three-quarters of an hour, and then the child became quieter.

The patient recovered, and the diagnosis was never made. From the examination of the fluid withdrawn from the canal it was evident that there was no inflammatory exudation in it, which was of some value in diagnosis. Although it is not at all uncommon in infants and young children to have cerebral symptoms in cases of otitis media rather than local ones, still, after paracentesis has been performed it is usual for the symptoms to subside very quickly. In this case they persisted for more than a week afterward. If a moderate diarrhea can account for the symptoms in any way, whether toxic or not, it is a unique experience. The child had been ill for ten days, as nearly as we could find out, and remained for three weeks in much the same condition in the hospital. Recovery gradually occurred; the diarrhea ceased; the ears stopped discharging; and the child began to notice her surroundings; but she remained very irritable. This we found by her father's testimony to be her normal condition. During the disease she was fed upon milk and lime-water, and took it very well, as a rule. There was but slight emaciation considering the length of her illness. Aside from the diagnosis, it is of interest to note the apparent cerebral symptoms which followed the tapping of the canal, in spite of the fact that only six cubic centimetres of fluid were withdrawn. For a half hour, or more, we expected the child to die.

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[1] Fürbringer: Soc. Med. Berlin, Mars, 1895; Revue Mens des Maladies de l'Enfance, June, 1895.

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

NINETEENTH ANNUAL MEETING, WINDSOR HOTEL, MONTREAL, CAN., SEPTEMBER 17-19, 1895.

(Concluded from No. 23, page 572.)

Dr. P. A. Morrow, of New York, read a paper on

URTICARIA PIGMENTOSA; A CASE TWENTY YEARS UNDER OBSERVATION.

The case was the first recognized as one of this affection observed in this country. It is unique in being under observation through infancy into adult life. Many cases show a spontaneous tendency to disappear at about the eighth or ninth year. The skin at the present time shows the property known as factitious urticaria, and this has been a constant feature throughout. The formation of figures upon the skin after irritation shows irregular elevation or a beaded appearance, each head representing the site of a lesion. Quotations were made from an already published description of the case. Lesions suggesting minute pigmentary moles have appeared in recent years, and the large nodular masses formerly present have disappeared to a large extent. There is much less pruritus than formerly.

It must be conceded, the reader says, that in the clinical course of this disease and in the anatomical changes which it presents it shows many points of difference from urticaria perstans.

In the present case the sound skin has always been subject to dermographism, although in a less marked degree than the pigmented lesions.

It may be questioned whether the urticarial elevations and the pigmented patches are expressions of the same or of different morbid processes. Is there a causal or merely a coincidental connection between them? In the present state of our knowledge it is impossible to give a good satisfactory solution of these pathogenic problems. In most cases there is a history of urticarial attacks preceding the appearance of the pigmented patches. The hyperplasia and pigmentation, the author believes, are the result of the intense and more or less constant congestion of the skin from the frequently recurring attacks. He has always regarded it as belonging to the urticaria group rather than as representing a distinct type of disease. There is probably conjoined with a vasomotor hyper-excitability a disturbance of the trophic centres which regulate nutrition.

Dr. White believed one of the most notable features of this disease at present was its greater prevalency, or at least more frequent recognition, in England than in any other civilized part of Europe. The number of cases of this disease recorded in this Association is very small (24).

Dr. Bronson asked Dr. Morrow how long this appearance of factitious urticaria remained, and whether when it disappeared it could be revoked immediately or only after an interval.

Dr. Morrow: The patient was stripped forty minutes. Within fifteen or twenty minutes the lines intervening between the lesions would become effaced, and the urticarial elevations still remain persistent. By slightly rubbing the surface these lines had a tendency to reappear. The urticaria on the sound skin had a tendency to disappear in from forty to sixty minutes. The patient himself, on being asked to note particularly the length of time, said two or three hours elapsed before they had entirely disappeared. As to revoking it immediately, he had never tried, but he thought it quite possible.

Dr. Bronson: In a perfectly graphical picture of urticarial pigmentation there is a striking difference between the distinct lines and these little bead-like elevations. The latter are no more numerous at these points than one would expect from common irritation of the surface. The irritation seemed only to affect the old lesions between them in a common factitious urticaria. It seemed to him that this implied something totally distinct between this disease and common urticaria, aside from the other distinctive characters mentioned — accumulation of moss cells and effect of common irritation.

Dr. Bulkley, though considering Dr. Bronson's point of view as very well taken, thought there might be two conditions combined here. He believed more microscopic study was required to enlighten us on the matter.

Dr. Elliot gave an account of a case of this disease occurring in a man who was under his observation some five or six years ago, and which he reported. The trouble began when the patient was twenty-eight. The lesions were particularly distributed over the trunk. Every one of them presented the peculiar characteristics of urticaria pigmentosa. The pigmentation was dark. He had the man under observation for several months and observed absolutely no change in the condition. He incised half-a-dozen of the spots which showed the moss cells around the vessels. Under these circumstances when we find a condition having all the important characters of any other disease, why exclude it? He remembers Relli some years ago presented a case of urticaria pigmentosa in a man of eighty-three; and it was accepted, although, as a rule, it occurs only in children.

Dr. Allen had one case of urticaria pigmentosa in his practice, off and on, for the past five or six years. With reference to the rapidity with which the urticarial wheals come out on the permanent lesions, or on the neighboring healthy skin, it often happened that in removing his clothes, or in indulging in a little scratching or rubbing after their removal, there was an almost immediate appearance of plaques as large as the palm, which became diffused over the healthy skin and the dark-brown pigment spots. As to treatment, he had never been able to keep him long enough under treatment to derive any benefit therefrom.

Dr. Morrow, in reply to Dr. Elliot's statement, did not express any opinion as to the propriety of excluding or including cases which occur for the first time in adult life. The disease is one essentially peculiar to infancy, and we would naturally not expect it to develop for the first time late in life. Crocker mentions Dr. Elliot's case in his book, and says he does not regard it as an urticaria pigmentosa.

STATISTICAL REPORT.

Dr. Hyde, of Chicago, reported for the Committee on Statistics that, during the year, the total number of skin cases reported by members was 24,321. No cases of sclerema neonatorum, anthrax, myoma, pellagra, nor impetigo herpetiformis have been reported, while of eczema there were 6,270 instances. Syphilis gave 2,432 and acne 2,261. About one-eighth of all cases (3,107) were of the rarer cutaneous affections.

Dr. Cantrell, of Philadelphia, sent a paper entitled

ULERYTHEMA SYCOSIFORM.

A seafaring man, fifty-five years of age, had nine years before suffered for two years with pustular disease of the beard, which got well. In 1891 he presented a similar condition, which was diagnosticated as non-parasitic sycosis. This persisted and destroyed much of the beard. There are extensive scar-like areas. The bald patches have a pinkish-red tint, are smooth and satin-like and of glistening atrophic appearance. The borders of the patch are defined. The course, too, shows no similarity with ordinary sycosis. There is permanent alopecia treatment for sycosis aggravates. Mercurials alone do good. No primary pustules were ever present while under observation. Near the periphery of the patch there is less loss of long hair; a few blebs were scattered over the patch having viscid transparent contents, drying into brownish crusts. The disease consists in a follicular and peri-follicular inflammation followed by atrophic scars. The microscope shows sharply defined cell-infiltration, most marked about hair follicles; an overgrowth of connective tissue in corium; no giant cells; no tubercle bacilli.

Dr. Allen, of New York, read a paper on

ERYSIPELAS,

first speaking of it in its etiological relation to preceding skin lesions and various dermatoses, then of its treatment. One hundred personal cases were analyzed, showing that 50 per cent. had originated in skin injury, of which vaccination furnished twelve instances, and skin diseases the remainder. Fifty per cent. of the cases were facial. Thirty of the last fifty cases seen had been treated by surrounding the advancing patch with strips of adhesive plaster firmly applied to check the spread, and then painting the enclosed area of skin with ichthyol in collodion up to 50 per cent. strength. In fourteen of these thirty cases there was no spreading beyond the barrier. The general impression made upon the reader of the paper had been that this combination of plaster and ichthyol varnish was superior to any other plan of treatment of which he knew.

Dr. Shepherd said he had seen a great deal of erysipelas, but had never found a remedy which would resist the progress. It is a self-limited disease.

Dr. Fordyce had seen better results from ichthyol than from any other local application.

Dr. Zeisler endorsed Dr. Allen's views on the value of local treatment. In 1892 he had seen considerable erysipelas in the Chicago wards. Boric-acid solutions had been used up to that time, but experimental trial of ichthyol was so successful that it has since been adopted.

Dr. White could see no advantage in the bandage. He would consider spreading equal to the width of the bandage or of the distance from the margin of the patch to that of the band, a great deal for a case in which he had begun to apply his favorite treatment of carbolic acid in equal parts of alcohol and water (one drachm to eight ounces). By comparison on opposite sides, it was shown superior to ichthyol.

Dr. Robinson preferred black wash or the old lead and opium wash. Internally he advocated iron in large dose.

Dr. Bronson approved of ichthyol but also of strong solutions of resorcin.

Dr. Elliot used a 50-per-cent. solution of ichthyol. A 10-per-cent. solution of chloride of phenol was, however, better.

THE VALUE AND LIMITS OF THE USEFULNESS OF ELECTROLYSIS IN DERMATOLOGY.

Dr. Zeisler being called upon by the Chairman to open a general discussion said he thought not much that was new could be said upon this subject. Electrolysis in hypertrichosis was of all means the best; but he thought it most useful in dealing with stiff hairs, and should not be employed for the lanugo hairs. Its use in nevi he considered limited to small nevi found in infants. One of the superficial nevi with the blood-vessels chiefly on the surface he had recently treated by this means. After fifteen or twenty sittings it did not appear that the results were very brilliant. He then had the patient desist for a few weeks, and report the result. She did so in very encouraging terms. Electrolysis was also useful in small growths of the fibromatous types; here, however, a little more care should be taken in piercing with the needle, as scars are apt to remain. He thought the needle should be inserted in such a way that the action would not be too deep. He used the electric needle also in anthomata, and thought it one of the safest, but not the least painful, methods for operating near the eye. As a local anesthetic, he had not much faith in cocaine; the only way to use it was to impregnate the electrode with the drug, and render the whole area anesthetic.

Dr. White agreed in the main with Dr. Zeisler's remarks. He, however, did not recognize the impossibility of removing lanugo hairs; he had done so a number of times. As to the desirability of doing so, that was another matter. He did not think electrolysis suitable for large nevi with hypertrophied vessels. As to port-wine mark, he had been very unsuccessful save when the area affected was very small. He had been using a 20-per-cent. alchoholic solution of cocaine, and he believed it helped to a certain extent. He did not believe there was much absorption by the skin, but imagined that any good effect which followed was due to the penetration of the drug into the hair follicles.

Dr. Morrow's experience corresponded with that of the other speakers. Some years ago he had experimented a good deal on the practicability of rendering certain limited areas of the skin anesthetic and he found the most thorough method to be that of cataphoresis. By scratching the surface, the cataphoric action was very materially favored.

Dr. Hyde's experience led him to believe that the attempt to remove the fine downy hairs only stimulated others to greater activity of growth. Electrolysis he believed useful in spider-cancer, with small telangiectodes, and in rosacea affecting the nose where the same condition exists. The operation was unsatisfactory where large vessels existed. He found that cocaine had a tendency to cause dermatitis.

Dr. Fox thought there could be no doubt of the value of electrolysis in dermatology, the only question to consider was as to its limits. In hypertrichosis it was not only the best but the only means for the permanent removal of hairs. If the finer hairs can be seen they can be removed. He made a rule never to operate upon hairs that were not conspicuous. The effect of electrolysis is to lessen the growth of hair upon the face. He does not believe that electrolysis ever increases the growth of neighboring hairs. Electrolysis is not more painful than the filling of teeth. Of course, if the needle is not properly introduced it might be very painful. Excellent results might be obtained in nevus pilosus. In vascular nevi his results have not been satisfactory. In the very pinkish wine-mark he preferred dotting the surface with carbolic or nitric acid but in the dark slate-colored wine-marks he believed single or multiple electric needles the best. In anthema he thought he had brilliant success with electrolysis, certainly better than could be obtained with a knife. He doubted if true keloid could be removed by electrolysis. In cases resembling keloid, following syphilitic ulceration of the cervical glands, a very good cicatrix can be produced. In angioma he thought it could be used with success, but not with more than that obtained from other methods. He used it in one case of epithelioma of the lip with good success.

Dr. Bronson thought its chief use was in cosmetic operations, and as to its limits that was for time to decide. The chief disadvantages are pain, the fact that the hairs sometimes appear to be stimulated to increased growth, and the danger of producing scars. In some measure he thought these disadvantages might be avoided. He thought the pain rather insignificant and believed the cramped position was more disagreeable. Increased growth of the hair, he thought undoubtedly occurred in many instances. The lanugo hairs he regarded as microscopic and invisible to ordinary eyesight, and impossible to remove. The finer downy hairs, after removal of their darker and stiffer fellows, were apt to suddenly take on a similar character; and it was by the total removal of these, as well as the larger ones, which ensured success. He had been trying the paste recommended by Unna (icthyol gr. xx, starch gr. xx, albumin gr. ii, water xxx m.). Painted on at night, it seemed to limit the reaction after operation. He found it succeed in rosacea after icthyol, resorcin and multiple scarifications had all failed. By making multiple punctures as close together as possible a considerable blanching of the skin resulted. He also found electrolysis useful in hypertrophied cicatrices, as in strumous glands of the neck.

Dr. Hertzell thought, so far as our present experience went, there was very little use in dermatology for electrolysis beyond cosmetic operations, such as removing superfluous hairs, small telangiectodes, etc. He agreed with Dr. Bronson in thinking it of value in rosacea. It destroyed the larger vessels, and the cicatrices following the multiple punctures, by contracting, served to drive the blood out of the part.

Dr. Jackson was in the habit of answering the question of patients as to whether the hair would grow again, by saying he could not tell how many or how long the hairs might continue to sprout, but he would take them out as fast as they did so. There may be some increased growth after an operation but these hairs would grow anyhow. He believed there were some women's faces where, do what one might, it was impossible to avoid scarring; and he consequently thought it a wise rule never to commit yourself to a strange case by promising that no such effect would ensue. It is especially apt to occur about the corner of the upper lip. The chief difficulty he found about the finer hairs was in telling when they were really removed and not broken off. He had often noticed pigmentation follow the removal of hairs. When patients complain of pain, he employed cocaine. He would be glad if some one could tell him how to prevent or reduce the reactionary inflammation. In the port-wine mark he found linear punctures with a single needle of value. There is no doubt about its efficacy in reducing the color; the art comes in knowing when to stop. In rosacea he thought there was a tendency for the destroyed vessels to reappear. He considered cataphoresis as a very painful method of inducing anesthesia.

Dr. Morrow thought Dr. Jackson's experience with cataphoresis must have been due to his using currents of too great strength.

Dr. Wigglesworth admitted the truth of Dr. Jackson's remark concerning the futility of treating the large deep vessels in rosacea by electrolysis, he also found that such were pretty sure to grow again. In the case of superficial vessels, however, it is otherwise, and he had often succeeded admirably. In lupus erythematosus one will always get results quite as good as those obtained by incisions. He also found electrolysis successful in treating acne indurata. The best way to use cocaine was in ten per-cent. alcoholic solution. It should not be rubbed in. Port-wine marks are often aggravated by wrong treatment. One case that had increased in size under applications of potash yielded entirely at one sitting to electrolysis. The current used was ten cells, and the punctures were made around the entire surface. In these rapidly acquired conditions, the results were much better than in the old solidified port-wine marks of birth. He managed to avoid scarring by paying attention to the points already alluded to. The mistakes made he thought were using too strong currents, not looking out for idiosyncrasies, such as a tendency to the formation of keloid or to the development of pigmentation; and if these were more closely considered, scarring would seldom result.

Dr. Graham asked if any of the members had ever used electrolysis for the removal of hairs in obstinate sycosis.

Dr. Robinson's experience was that the irritation caused by the introduction of the needle certainly produced an increased growth of the neighboring hairs. In fracture of the tibia, when the skin is near the broken bone, hairs develop in increased quantities. Shaving is another instance of irritation increasing the growth of hair. For these reasons he never used electrolysis on any part, such as the upper lip, where the hairs are close together; but it was very useful in other parts of the face. Electrolysis is the most satisfactory method we know of in treating hairy nevus; success is always the reward of patience. He thought the method of using the needle had something to do-with the reactionary inflammation. If you go right into the follicle the irritation is less than if you go outside of it. He uses powerful spectacles which enable him to see the opening of every follicle.

Dr. Allen had of late been using a flat sharp-edged needle, and carrying it slowly from one side to the other he removed warts and moles in a single sitting. This he found the nicest and neatest way. A ten-per-cent. watery solution of cocaine will render so-called seed warts much less sensible to pain. He had removed several large moles lately with the flat needle at one sitting with good result, and knew of no other method whereby they could be removed so quickly and without scarring. Electrolysis was especially adopted for removing hairs from the chin, and it was not so successful in those of the upper lip. Many of these little abnormalities of growth upon the face really enhance the beauty of the individual, and by telling them so, he found it possible to reconcile many ladies. Electrolysis is useful in superficial varieties of port-wine mark, and in such he found the best results were obtained when the needle was used superficially. He did not think the use of glasses was of much importance to find the opening if one could not tell the direction of the follicle. Glasses will not help here. He did not think the deep effect of cocaine necessary, since it was mostly a surface sensitiveness and only the entrance and exit of the needle that caused much pain. He either used benzoated collodion, or a powder.

Dr. Fordyce had during the past year, discarded batteries altogether in favor of Edison's coil, with which one can get a current as low as half a milliampère.

Dr. White called attention to the comparatively few years after Dr. Hardaway had first brought this operation to our notice that all the advantages and disadvantages were known. It seemed to him that there was nothing said to-day that was not known years ago.

Dr. Zeisler did not think so far as the development of new hairs was concerned that electrolysis was the cause. A little stimulation may assist hair already present to grow more rapidly, and he thought that was the most that could be said.

Dr. Hyde: A man with an obstinate neuritis over one scapula which he had been blistering and stimulating continually for years had over the affected region a growth of hair two and a half inches long, and nowhere else in that locality. A little downy hair can be produced on the scalp by irritation or stimulation, but it soon drops off.

Dr. Sherwell, while fully agreeing as to the propriety of using electrolysis in hairy moles, as a general remedy in dermatology has been much disappointed in it. He has never seen much good following its use in serious angiomatous conditions; there he found the galvano-cautery or the igneous puncture to give more satisfactory results. For small growths he preferred an elliptical incision which left but a slight scar. He thought the American Indian who continually pulled out the beard had as good success as one sees after electrolysis. He advised pulling.

ELECTION OF OFFICERS.

Dr. A. R. Robinson, of New York, was elected President; Dr. F. J. Shepherd, of Montreal, Vice-President; Dr. C. W. Allen, of New York, Secretary and Treasurer.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-first Annual Meeting, Detroit, September 3–6, 1895.

The Association convened in the Strassburg Academy, and was called to order by **Dr. H. O. Walker**, of Detroit, Chairman of the Committee of Arrangements.

Prayer was offered by the **Rev. Marcus A. Brownson**, of Detroit.

Dr. Walker then introduced **Mayor Pingree** who paid an eloquent tribute to the medical profession, and extended a cordial greeting to the Association.

The Address of Welcome on behalf of Detroit physicians was made by **Dr. J. Henry Carstens**, of Detroit.

The President of the Association, **Dr. Wm. N. Wishard**, of Indianapolis, delivered

THE PRESIDENTIAL ADDRESS.

He said the importance and advancement of Detroit was represented by the standing and intelligence of the local physicians. He referred to the beginning of the four years' course in medical colleges, and said the fear that the new rule would operate to the disadvantage of the smaller schools was unfounded. The President urged the advisability of publishing the records, papers and discussions in some manner to make them accessible to all members. He recommended a permanent Executive Committee, and regretted that the large number of papers necessitated the holding of two meetings at the same time. He commended the preparations for the Convention, and pledged his earnest efforts to the promotion of the profit and pleasure of the Convention.

The reports of the Secretary and Treasurer were read and accepted.

The reading of the papers was proceeded with, the first one being read by **Dr. Thomas Hunt Stucky**, of Louisville, entitled

THE GOLD COMBINATIONS AS ALTERATIVES.

At a meeting of the Medico-Chirurgical Society of Louisville, April 5, 1894, the author had the pleasure of exhibiting a series of cases who had been taking the preparations of gold and arsenic, known to the profession as *arsenauro* and *mercauro*. He was under the impression at that time that the good effect claimed was produced in three ways: (1) By stimulation of the secreting glands of the stomach; (2) by the probable alterative effect upon these secretions, and (3) that probably there was a local antiseptic influence exerted. The class of patients in which he had used the preparations were people afflicted mostly with consumption, Bright's disease in its various stages, chronic hepatic troubles and convalescents. He made it a rule with all these cases to withdraw all medicine except the combinations of gold and arsenic. He had selected from a series of cases four or five, which he detailed.

He reported a few cases out of a large number to demonstrate in his judgment conclusively that by the combinations of gold and arsenic we have an agent acting as neither of the minerals do when administered separately, or in other words, we have an entirely new agent in so far as therapeutical action is concerned.

LEGITIMATE PHARMACY.

This paper was read by **Dr. Wm. F. Barclay**, of Pittsburgh. He defined legitimate pharmacy as that which meets the necessities and demands of the regular medical profession and the people.

Dr. F. E. Stewart, of Detroit, read a paper on

COD-LIVER OIL.

He considered the powerful stimulant action of cod liver oil on nutrition, also demonstrating with specimens the difference in the color of oil digested from fresh livers and that prepared from putrid livers, the former being pale, golden or light brown, according to the number of hours digested, and the latter dark brown. The darker oils contained more extractive matter. Dr. Stewart said the text-books contained many errors regarding the preparation of cod-liver oil.

Dr. D. T. Gilliam, of Columbus, O., read a paper entitled

UTERINE FIBROIDS — WHEN TO OPERATE.

The medical and electrical treatment of uterine fibroids is to-day in a very unsettled state. While it cannot be denied that amelioration or even recovery has followed such lines of treatment, there has not been that degree of uniformity in results calculated to inspire confidence. To the author's mind there is no better field for a competent observer than the study of the natural history of uterine fibroids. It will enable us to determine the true value of so-called curative agencies. It will insure a more certain prognosis. It will give the proper cue to surgical interference. If out of 100 cases, 90 suffering women can be restored to lives of usefulness and happiness, would it not be better to give them a chance? No surgeon is justified in doing hysterectomy or the more serious operations for uterine fibroids when the patient has not experienced sufficient trouble to make it a menace to her life.

TUBERCULAR PERITONITIS.

This paper was read by **Dr. L. H. Dunning**, of Indianapolis, Ind.

The mode of invasion, forms of the disease, diagnosis and treatment were considered in the paper, and finally a brief history of five cases was given.

Tubercular peritonitis with effusion is now universally considered a surgical disease. Even in the acute suppurative cases, abdominal section yields a sufficient number of successes to render its employment imperative. Senn excludes all forms of the disease from surgical treatment except the exudative form. Mauclaire gives as the chief contraindications to surgical treatment, the generalization of the lesion and the existence of profound systemic infection. Linder analyzes the results in 205 operations with a mortality of 7.5 per cent. The deaths resulting in most of these cases were from collapse. In cases of involvement of the tubes and ovaries, they should be extirpated. His experience in two cases leads him to the belief that we should, if possible, avoid using silk ligatures in tying the pedicle when it is necessary to remove the uterine appendages. Two of the five cases reported by the author terminated fatally.

Dr. R. S. Sutton, of Pittsburgh, had seen a good many cases of tubercular peritonitis, upon several of which he had operated successfully. Until within a year he had been in the habit of washing out the cavity with hot water, but now he pays no attention to it, but simply opens the abdomen and cleans out everything. He is convinced that while hot water does no harm, it does no good in that it has no influence upon the disease. He believes in removing, as far as possible, all diseased organs.

Dr. Henry O. Marcy, of Boston, operated in 1887 for the first time on a case of tubercular peritonitis, the patient making an easy recovery. He had operated several times since then for this disease, with excellent results.

Dr. A. H. Cordier, of Kansas City, Mo., called attention to the fact that Mr. Wells, as early as 1862, operated for tubercular peritonitis, simply incising the abdomen and draining, thus curing his cases. He thinks that drainage is the principal thing that brings about a cure in this disease, but how, is not definitely settled. He said the theory had been advanced by Dr. Morris, of New York, that it is due to the admission of saprophytes into the peritoneal cavity.

Dr. Bayard Holmes, of Chicago, related an interesting case of adhesive peritonitis cured by operation.

HYSTERECTOMY FOR PUERPERAL SEPSIS. WHEN SHALL IT BE PERFORMED? WITH A REPORT OF FOUR CASES.

The author of this contribution was **Dr. Bayard Holmes**, of Chicago.

The paper was divided into five parts: (1) A report of four cases of puerperal sepsis treated by four different methods; (2) the pathology of puerperal sepsis in various stages; (3) curettement in the hands of its advocates; (4) puerperal sepsis as a cause of death in Chicago, New York, Brooklyn, and in the Charity Hospital at Berlin, with an abstract of 79 deaths from puerperal sepsis in 6,635 cases.

The first case was a multipara, twenty-six years of age, of Irish extraction, having a history of tuberculosis of the lungs, confined under unfavorable circumstances with retained placenta, post-partum hemorrhage, delivery without an anesthetic with the hand of the physician, arrest of hemorrhage, gradual sepsis, failure of curettement and death seven weeks after confinememt.

The second case was a woman, thirty years of age, normal confinement, with sepsis appearing upon the fourth day of a mild character, gradually increasing until six weeks after delivery. Temperature was high, pulse rapid, and symptoms of peritonitis with obstruction of the bowels. Laparotomy. Removal of the right broad ligament, tube and ovary; drainage through the vagina. Death after eight days, without peritonitis, from phlebitis and pulmonary embolism.

The third case was in a multipara with gonorrheal history — an abortion followed by pelvic inflammation, peritonitis and obstruction three weeks after delivery. Removal of both tubes and abdominal drainage. Death after ten days, without peritonitis, through phlebitis and pulmonary embolism.

The fourth case was a multipara, thirty-two years of age, delivered by a midwife, with a bad history of puerperal infection, rapid onset of a mild infection, no curettement. Obstruction of the bowels, vomiting six weeks after delivery, with evidences of peritoneal effusion. Laparotomy; removal of the uterus and its adnexa; abdominal drainage and recovery. This uterus and these appendages were carefully examined microscopically. There was evidence of necrotic endometritis, suppurative endometritis, suppurative metritis, suppurative lymphangitis in both tubes, with abscess of the ovarian ligament upon the right side and adjacent peritonitis. The blood-vessels throughout the broad ligaments were found indicating a progressive infective thrombosis. The uterine tissue was filled with pus-cells, occupying the perivascular and lymph spaces with occasional obliteration of large blood-vessels. A great number of *mastzellen* were found throughout the infected tissues. The author held that the progress of puerperal infection was in this case through infective thrombosis and suppurative lymphangitis, and that the removal of both tubes and drainage would have been ineffectual. He then proceeded to recount the pathological findings in cases of non-infected puerperal women dying from accidental causes during the first, third and sixth weeks after labor, and also cases dying at somewhat similar times after labor, stating the comparison of the normal and abnormal uterine and peri-uterine tissues.

In the fifth part he gives the following statistics: In the city of Chicago, during the years 1881 to 1894 inclusive, there were 2,127 deaths from puerperal fever. In New York, during six years ending May 31, 1880, there were 250,000 deaths, of whom one-sixth were females, and 2,236 of these deaths were due to the pregnant state; of these, 1,250 were due to puerperal infection. In Brooklyn, with 112,000 deaths during the same period, 53,000 were females; and of these, 867 died of the puerperal state, 462 dying of puerperal sepsis. These figures show the importance of the subject.

The question of treating puerperal infection by évidement or curetting was discussed by presenting the work of its own advocates, showing that out of 7,600 cases of labor in the hands of one of the advocates of curettement, 101 were treated by repeated curettement and irrigation. Of these 96 recovered, and 5 died. An abstract of the history of these five cases was presented, showing that there was every reason to believe that after curettement had failed hysterectomy would have proved efficient in saving the patients.

A series of 6,635 cases of confinement occurring in the Charity Hospital in Berlin under the care of Penzoldt, Schwarze, Huenermann and Hochselter during four successive years were then analyzed. Seventy-nine deaths from all cases occurred. Of these deaths, 33 resulted from puerperal sepsis, and in order to fully understand the possibility of these cases, a short epitome of the history of each was presented, showing that only three out of 633 cases were of such a character as to give rise to the suspicion that they might have been saved by a hysterectomy.

The author gave the following conclusions: (1) Puerperal sepsis has its origin in the endometrium and usually travels by the lymph channels or by the thrombosed blood-vessels and the lymph channels together. (2) It still causes almost one-half of the deaths which occur in the puerperal state. (3) Curetting is ineffectual in many cases of puerperal sepsis. (4) The removal of an infected broad ligament and the drainage of a pelvic abscess or peritonitis is often ineffectual. (5) Hysterectomy should be performed, therefore, in such cases of puerperal infection as do not yield to uterine curetting and irrigation. (6) Hysterectomy should be done whenever peritonitis is present in the course of puerperal fever. (7) Hysterectomy should be performed in cases of puerperal mania where there is a history of endometritis without uremia. (8) Hysterectomy may not be helpful in the course of diphtheritic vaginitis and endometritis. (9) Hysterectomy may not be helpful in cases of rapid early infection. (10) It may not be useful in cases of septic phlebitis reaching outside the pelvis.

Dr. Wm. H. Humiston read a paper entitled

A METHOD OF PREVENTING THIRST FOLLOWING CELIOTOMY.

No one who has had any experience in the after-care of abdominal cases, will deny the important place that thirst occupies. It is the one prominent, annoying and distressing symptom, and I know it can be overcome. This is my method of procedure:

The patient should have the usual preparation for celiotomy, that is, diet, daily baths, cathartics, etc. For three days prior to operation order the patient to drink one pint of hot water an hour before each meal and on retiring, thus drinking two quarts of water each twenty-four hours, the last pint to be taken three hours before the time set for operating. Do not omit to give the water the day previous to the operation, while the patient is restricted to a limited amount of liquid nourishment and the bowels are being unloaded. We thus restore to the system the large loss of fluid occasioned by the free catharsis, and we have the great satisfaction of seeing our patient pass through the trying ordeal of the first thirty-six hours after the operation in comparative comfort, with no thirst, a moist tongue, and an active renal function, represented by an excretion of from twenty-eight to fifty fluid ounces of urine during the first twenty-four hours, catheterization being seldom necessary. This is in keeping with the full character of the pulse noted.

The above details I have recently carried out in twelve cases. To eleven chloroform was administered; to one ether. The time required to complete the operation varied from ten to fifty-five minutes. Whether the case was one of sclerotic ovaries or a pus case with universal adhesion of all the pelvic structures, the result has been uniform and highly satisfactory, thirst being allayed and excretion stimulated.

I believe this method will prove to be efficient in the hands of abdominal surgeons generally, and I publish it early with all confidence that the twelve cases that I have had will soon be fortified by the reports of many hundreds, and that by it we may avoid a condition that is and has been distressing alike to the patient, surgeon and nurse.

CELIOTOMY IN GENERAL SUPPURATIVE PERITONITIS, WITH THE REPORT OF A CASE.

This paper was read by Dr. Miles F. Porter, of Fort Wayne, Ind. The author first quoted Grandin, who says regarding general puerperal peritonitis, "The women die, no matter what the form of treatment employed." Dr. Baldy says, "To my knowledge there has never been reported an undoubted case of general purulent peritonitis from any cause whatever, in which an abdominal section or any other line of treatment has succeeded in saving the patient's life." That the mortality of general septic peritonitis is large all will agree, but that it is always fatal is certainly not true. Dr. Porter then reported the case, and closed by saying that the object in writing the paper was to assist in arousing a sentiment against the too prevalent idea that in general septic peritonitis death is inevitable, and to encourage in these cases prompt operative interference.

PERITONEAL IRRIGATION AND DRAINAGE,

was the title of a paper read by **Dr. A. H. Cordier**, of Kansas City, Mo., in which he said that the latest works on abdominal and pelvic surgery contain, like the older text-books, very short and misleading articles on the indications for peritoneal irrigation and drainage; and still less explicit are the directions how to use these agents for good, intelligently and correctly. This diversity of opinion among authors leaves the inexperienced beginner in a position of perplexity and doubt as to the special course he is to pursue in his early work. The same principles hold good in draining the peritoneal cavity that are applicable to other parts of the body. No surgeon, with all the antiseptic precautions possible to be used in opening a diffuse abscess of the thigh or other part of the body, would think of such a thing as at once closing a wound hermetically, leaving many broken-down shreds of diseased tissue dangling in the abscess cavity. He might have irrigated the cavity thoroughly with a 1–1,000 solution, yet he would not feel it safe to close the wound until after he had made counter-openings and introduced a drainage-tube, this being as near ideal surgery as it is possible to obtain in these cases. Freshly-boiled distilled or filtered water, cooled to 102° to 110° F. should be used in irrigating.

The author drew the following deductions: (1) Drainage is a life-saving process when properly used. (2) To use it is not an admission on the part of the surgeon that his work during the operation is imperfect. (3) The use of the tube alone does not produce or leave any condition that favors the development of hernia. (4) The omentum or other structures do not become entangled in the openings in the tube. (5) A small-sized flint-glass tube, with small openings and open end should always be selected for pelvic drainage. (6) The tube does not produce fecal fistula. (7) The tube should be used when in doubt as to the absence or presence of drainage indications. (8) To depend upon microscopic findings as to whether a given case should or should not be drained is seemingly scientific, but is neither necessary nor practicable. (9) Gauze drains should rarely be used and should always be supplemented by a glass drain. (10) There is no danger of infecting the patient through a tube if the attendant is properly instructed.

Dr. J. Henry Carstens, of Detroit, followed with a paper entitled

THREE CASES OF HYSTERECTOMY FOLLOWING CELIOTOMY FOR PUS-TUBES.

The author summarized his remarks as follows:

(1) It seems to me in the light of my present experience in cases of bilateral pus-tubes that a more perfect and complete operation can be performed by abdominal section, with less danger of injury to the bladder and intestines, and with smaller mortality and better ultimate results.

(2) That in certain cases a better immediate result is obtained by vaginal hysterectomy and drainage, but these cases frequently require a second operation to remove the ovarian tissue and parts of the tube, which at first in many cases cannot be removed, before a perfect ultimate cure is established.

(3) Where the sympathetic and other nerves are affected, the cause is not in the uterus, ovaries or tubes alone, but part in each. We are unable to state which organ is at the bottom of the trouble. Sometimes it may be only one, sometimes the other, sometimes two or all three: hence, in such cases I would say —

(4) In many cases with marked nervous symptoms, the best results are obtained only after the complete removal of every particle of the generative organs — that is, uterus, tubes and ovaries, be this accomplished at one, two or three operations, *per vaginam*, or by abdominal section.

Dr. R. S. Sutton, of Pittsburgh, favored abdominal section for pus-tubes. He maintained first and foremost that a uterus deprived of its appendages is of no use; second, that it is an organ, if left, which is liable to tuberculosis, gonorrhea, syphilis, nasty discharges, adhesions, etc. When it is decided to remove the appendages, the uterus also should be taken out.

Dr. Gilliam, of Columbus, O., argued against the removal of the uterus with the appendages except in order to save life, the objection being that shortening of the vagina resulted.

Dr. B. M. Ricketts, of Cincinnati, believes total extirpation will be relegated to oblivion. The dangers are cystocele, hernia, increased danger by prolonging the operation, and shortening of the vagina.

Dr. Henry O. Marcy, of Boston, favored retaining the cervix when it is healthy, and pointed out the reasons why it should not be removed. It helped materially in acting as a support to the vault of the vagina.

Dr. Holmes, of Chicago, in discussing Dr. Cordier's paper, said that drainage was a sort of vicarious redemption for poor surgery. Whenever it is impossible to make a wound clean, we must drain, and sometimes we drain when the wound is clean, but we are unable to arrest the hemorrhage. He could conceive of no other indication for drainage, whether in the abdomen, the brain, or any other part of the body, than failure to meet the one great indication of wound treatment — to keep the wound clean.

(To be continued.)

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THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M. D., SECRETARY.

Regular meeting October 12, 1895, the Second Vice-President, **Dr. A. Worcester**, in the chair.

Dr. John G. Blake reported

CASES OF INTEREST FROM THE SUMMER GYNECOLOGICAL SERVICE AT THE BOSTON CITY HOSPITAL.[1]

Dr. Councilman said that the two malignant cases reported by Dr. Blake were of unusual interest from their rarity. They were both cases of giant-cell sarcoma of the uterus.

Dr. M. H. Richardson said that in all operations connected with the pelvis we must be prepared for phlebitis, even in operations that are apparently entirely aseptic. He has had two cases fatal from pulmonary embolism, one after an operation for appendicitis, another after the removal of a ruptured ovarian cyst.

Dr. Englemann, referring to the death following the Alexander operation, said that he many years ago lost a patient from sepsis following a slight operation on a lacerated cervix. At that time he looked into the subject and found that a large number of trifling operations, especially on the perineum, had from time to time resulted fatally from sepsis.

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[1] See page 585 of the Journal.

Dr. Charles W. Townsend reported

A CASE OF SPONTANEOUS RUPTURE OF THE UTERUS.[2]

Dr. Englemann had seen a case of rupture of the fundus of the uterus in a shoulder presentation of a child weighing nearly twelve pounds. The child tamponed the rent and there was no collapse until the child was removed, when extensive hemorrhage into the abdomen took place. The patient died in a few hours.

Dr. Edw. Reynolds had seen four cases of rupture of the uterus, one only being spontaneous. Three of these recovered under conservative treatment, the fourth died. He believed that the collapse in these cases was due not necessarily to the hemorrhage, but to the shock of the rupture.

Dr. G. Haven had seen four cases of rupture, including the one reported to-night. In all conservative methods were followed and one recovered. In one case there was severe collapse from the shock, with very little hemorrhage.

Dr. Councilman suggested that the collapse in these instances with all the symptoms of hemorrhage may be due to the sudden dilatation of the portal vessels, for these can contain one-half the blood in the body.

Dr. A. D. Sinclair reported some thirty years ago a case of rupture almost exactly like the one reported by Dr. Townsend. The patient died twenty-three hours after delivery.

Dr. M. H. Richardson, referring to the slight post-mortem indications of peritonitis in the case reported, said that he had had two cases that died with all the clinical evidence of septic peritonitis, and yet the pathologists could find none.

Dr. Councilman said that in patients much reduced by hemorrhage or shock there may be general infection without the local phenomena of inflammation.

Dr. M. H. Richardson reported

A CASE OF EXTRA-UTERINE PREGNANCY

and showed a water-color sketch of the specimen.

Dr. A. Worcester reported

A CASE OF EXTRA-UTERINE PREGNANCY

and showed specimen. The patient, eight weeks advanced in pregnancy, was suddenly seized with violent abdominal pains and went into a collapse. When seen by him she was pulseless, the belly was filled with blood and the right Fallopian tube with its ruptured ovum was easily found. Despite much stimulation and salt solution, the patient died in six hours.

Dr. M. H. Richardson referred to the apparent connection between these cases and former abortions or chronic gonorrheal discharges.

Dr. Engelmann said we all agree on the propriety of operation in cases of extra-uterine pregnancy, but he had often wondered whether many of the cases in former times diagnosticated as hematocele did not get on as well without operation, and whether unfavorable results were not more common now.

Dr. A. Worcester said many of the cases in former times diagnosticated as hematocele did die, and many more died where the diagnosis of heart disease or apoplexy were made that were in reality sudden deaths from rupture in extra-uterine pregnancy.

Dr. M. H. Richardson said he could not insist too strongly on the importance of operation in all cases where the trouble was discovered, as the results of the fulminating cases were so severe while those of a timely operation were so successful.

Dr. J. G. Blake referred to the fact that this disease because not diagnosticated was formerly so rare in Boston, while within the last two years, mainly by members of this Society, a very large number of cases has been reported.

Recent Literature.

Remote Consequences of Injuries of Nerves and their Treatment. An Examination of the Present Condition of Wounds received, 1863–65, with Additional Illustrative Cases. By John K. Mitchell, M.D., Physician to St. Agnes Hospital, etc. Small 8vo, pp. 245, with twelve illustrations. Philadelphia: Lea Brothers and Co. 1895.

The work before us is an unusual one, if not absolutely unique. It is a study, thirty years after the war, of the cases of gunshot and other injuries of nerves collected by the elder Mitchell during the war, and published in his classical work on "Injuries of the Nerves." In spite of the enormous difficulties in following up the cases after such a long period, the author has given us an elaborate study of fifty-two cases of great interest, and the book as a whole, is a worthy sequel of his father's well-known work. The different chapters treat of contusions of nerves, sections of nerves, ascending neuritis, degeneration and regeneration of severed nerves, and the treatment of nerve injuries. Each collection of cases is preceded by a brief discussion of the more important questions, and a summary of the most interesting symptoms of the individual cases. Cases of such long duration and of such severity are so seldom reported that every case presents individual symptoms of great interest, which cannot, however, be enumerated in a brief review. The work has been admirably done, and it will prove indispensable to every neurologist and surgeon who has ever consulted the elder Mitchell's work.

Leçons sur les Maladies Nerveuses. Salpêtrière, 1893–94. By E. Brissaud. 8vo, pp. iii, 644; with 240 illustrations. Paris: G. Masson. 1895.

It was a bold task for any man called to fill temporarily the vacancy left by Charcot's death, deliberately to challenge comparison with the great clinical teacher by publishing an independent series of lectures on nervous diseases at the Salpêtrière. The medical world might well inquire "who should lift that wand of magic power, and the lost clue regain?" Having done his best to pay a modest and respectful homage to the memory of his predecessor, Brissaud yielded to the request of his hearers to publish thirty of his lectures. For this we must thank both him and them. The volume before us may well be placed by the side of that long series which has made the Salpêtrière famous, and it will of itself add new renown to its old walls. It maintains the standard of the best French clinical lectures, clear, brilliant, and fascinating in style. The book opens with a brief but admirable tribute to the dead master, and the first two lectures are by a most appropriate choice devoted to Charcot's disease, amyotrophic lateral sclerosis. This is followed by two lectures on Friedrich's ataxia, and hereditary cerebellar ataxia, in which the clinical distinctions of the two affections are clearly pointed out. Sixteen of the thirty lectures are devoted to various forms of spinal disease, and four to the varieties of ophthalmoplegia. Paralysis agitans, exophthalmic goitre, myxedema, cerebellar disease, aphasia, sensory disturbances, and certain forms of spasms are treated of in the remaining lectures. In each of these lectures the reader will find a clear discussion of the latest views upon the subject under consideration. We commend the work not only to students but to all interested in neurology.

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[2] See page 569 of the Journal.

A Treatise on Nervous and Mental Diseases. For Students and Practitioners of Medicine. By LANDON CARTER GRAY, A.M., M.D., Professor of Nervous and Mental Diseases in the New York Polyclinic, etc. Second Edition, Revised and Enlarged; with 172 illustrations and 3 colored plates; 8vo, pp. xi, 733. Philadelphia: Lea Brothers & Co. 1895.

The praise which we gave to the first edition of this work has been justified by the demand, within a little over two years, for a second edition. Although considerable new matter has been added, the size of the work, by an omission of the bibliographies, has not been very greatly increased; it is less than fifty pages greater. In the first part of the book the chapter on anatomy has been much enlarged and practically rewritten, to embody some of the recent studies by Golgi's methods. We miss, however, a complete demonstration of the various sets of neurons, and the employment of some of the modern diagrams, like those of Van Gehuchten, which, although schematic, are of much help to the beginner. To the first part is also added a brief chapter on massage. In the second part no new chapters have been added, although there has been much careful revision and many changes. The section on palmus, or convulsive tic, has been rewritten and much enlarged, embodying much of the author's later experience with these cases, and the pathology of paralysis agitans, very slightingly treated in the first edition, is now fully discussed. Many lesser changes have also been made, especially in the sections on treatment, to which have been added various detailed directions for various methods of cure. We may note that the thyroid treatment of myxedema, concerning which the author was so guarded as to say nothing in the last edition, has now won an assured place. The section on insanity has received numerous additions. The pathology of general paralysis has been more fully discussed in the light of later researches, and entirely new chapters have been added on dementia, dementia paranoides, confusional insanity and delirium. More than two years of practical use of the first edition warrant us in commending the present edition even more highly than we did the first.

Modern Medicine and Homeopathy. Two addresses by JOHN B. ROBERTS, A.M., M.D. Philadelphia: The Edwards and Docker Company. 1895.

This little book contains two lectures delivered before the Philadelphia County Medical Society, 1892–1895. The first considers "The Similarity between Us (*sic*) and Homeopaths." The second treats of "The Present Attitude of Physicians and Modern Medicine towards Homeopaths."

The first lecture is devoted to minimizing the differences which separate homeopathy from regular medicine, and urges greater liberality towards educated men who call themselves homeopaths. Dr. Roberts asserts that "to-day there is little belief in, or practice of, homeopathy as advocated by Hahnemann." Old-fashioned homeopathy is sufficiently vulnerable, but who believes in it.

The second lecture on "The Present Attitude towards Homeopathy" hints at a day perhaps not far distant when all scientific physicians will be willing to drop titles indicating exclusive methods of treatment. "Medicine is a science and an art, and is not electropathy, homeopathy or allopathy." "It is equally clear that physicians who claim to study and practice the science and art of medicine" are not homeopaths, allopaths, or electropaths. Unfortunately the general public do not realize this; and the majority of medical men are allopaths, simply because they are not homeopaths. The error has been perpetrated by homeopathic literature giving the name allopath to those physicans who are unwilling to be homeopaths, and who refuse to be affiliated with any sect of medicine."

These addresses are carefully written by one well in touch with the times, and will repay perusal.

Mentally-Deficient Children: Their Treatment and Training. By G. E. SHUTTLEWORTH, B.A., M.D., etc. London: H. K. Lewis. 1895.

This small manual is in spite of its size a most compact and satisfactory work upon all practical points relative to children who are variously classed as mentally deficient, feeble-minded, imbecile or idiotic. All the essentials are given concisely and interestingly, and not at all after the manner of the average "compendium." More than half of the book is devoted to treatment of these defections in their various aspects, and the chapters on their educational, moral and physical training, as well as recreation, are full of sound advice, and make very instructive reading.

The purpose of the book, which is to help the general physician in his diagnosis, prognosis and recommendations, is sure to be amply fulfilled, for he will find here given in a few words just the aid he requires in advising with regard to those unfamiliar cases which are out of the beaten track of practice.

Skiascopy, and its Practical Application to the Study of Refraction. By EDWARD JACKSON, A.M., M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine; Surgeon to Wills Eye Hospital, etc. Octavo, pp. 112. With twenty-six illustrations. Philadelphia: The Edwards & Docker Co. 1895.

This little book was written to bring about the more general adoption of skiascopy, or retinoscopy as it is more commonly known in New England; and after reading Dr. Jackson's book, one really does not see why retinoscopy is not as good a name as the one adopted. The description of the phenomena upon which the test depends is by far the best which has yet appeared. The tests as advised by that author are certainly more elaborate than would be generally employed in the hurry of ordinary clinical work, but the accuracy with which the refraction can be determined by this method alone is well shown. It is certain that skiascopy as here recommended will give us more accurate information about the refraction of an eye than any other single method of measurement can possibly do.

The illustrations are very good and show very well what the student should look for under the different refractive conditions. This method of examination is certainly growing in favor and the appearance of the book is opportune.

Outline of Materia Medica and Pharmacology. A Text-Book for Students. By H. M. Bracken, M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine, University of Minnesota. 8vo, 383 pp. Philadelphia: P. Blakiston, Son & Co. 1895.

This work, the outgrowth of the "Outlines of Materia Medica" which was prepared for the use of the medical students at the University of Minnesota, is intended to serve as a text-book in the study of materia medica, to facilitate note-taking in the lecture-room and to aid in the laboratory study of drugs. It treats the subject first in a general introduction, and then under the classification of acids, the metals, non-metallic elements, carbon compounds, the animal and the vegetable kingdoms; making mention of all included in the 1890 revision of the United States Pharmacopœia, and also of the newer and more important non-official preparations which have come into use since then, many of these being synthetic. Each article is described, and the official preparations into which it enters given, also its physiological and toxicological action and its therapeutic uses.

The work will be found to be one very useful for the busy practitioner as well as for the student, for whom it was more specially prepared.

A Guide to the Aseptic Treatment of Wounds. By Dr. C. Schimmelbusch, assistant in the Royal Surgical Clinic of Berlin. Translated from the second revised German edition by Frank J. Thornbury, M.D., Lecturer in Bacteriology at the University of Buffalo, N. Y., etc. New York and London: G. P. Putnam's Sons. 1895.

The writer was an experienced operator and also a laboratory investigator. His book is what its title describes — a manual of aseptic technique. Sources of infection are stated. Disinfection, as applied to patient, operator, instruments, dressings, sutures, ligatures, wound drainage, is described at length. Both regular and emergency work are included. An extensive bibliography of the subject is appended. The text is well illustrated by forty-three wood-cuts. The book is an attractive and useful volume and a good exponent of methods now employed in the chief German surgical clinics.

The Science and Art of Obstetrics. By Theophilus Parvin, A.M., M.D., LL.D. Third edition, carefully revised. Illustrated with 269 wood-cuts and two colored plates. Philadelphia: Lea Brothers & Co. 1895.

This third edition of Dr. Parvin's text-book has the great advantage over its predecessors that the arrangement of its subject matter has been altered from the formal or scholastic plan, which distinguishes the older text-books, to the more natural scheme which has begun to obtain of late. The book has already been reviewed by the Journal; and little more need be said of it than that it has been brought fully up to date, and can be recommended as an excellent text-book. Its most marked feature is in its constant reflection of the high character and unusually deep scholarship of its distinguished author, which the reader cannot help noticing in any portion of the book which he may pick up, though like all works of marked individuality, it is perhaps in spots slightly intolerant of views which are opposed to those of the author.

A Manual of Obstetrics. By A. F. A. King, A.M., M.D. Sixth edition, with 221 illustrations. Philadelphia: Lea Brothers & Co. 1895.

The sixth edition of this manual differs from its predecessors mainly in the addition of a large number of illustrations, all of which are old friends, having appeared in many other treatises. The volume is so well known that it needs but little description. It furnishes a clear, concise epitome, written upon the lines of the larger text-books but in a somewhat more condensed form, and, as has been said before in these pages, is an admirable work of its kind.

La Méthode Brown-Séquard, Traité d'Histothérapie. La Thérapeutique des Tissus, Compendium des Médications par les Extraits d'Organes Animaux. Par le Dr. M. Bra, Accompagné de 72 gravures. Paris: J. Rothschild, Editeur. 1895.

This work is prefaced by several commendatory letters from well-known medical men. Its best title is "Compendium of Medications from Extracts of Animal Organs." The subjects considered are of much interest, but vary widely in importance. The value of cardine is evidently slight; medication by means of an extract made from liver substance has as yet yielded little fruit; and the same may be said of extracts made from the kidney, the spleen and the lungs. On the other hand, thyroid medication is of recognized importance; the chapter on this subject is one of the most valuable in the book and contains likewise one of the most complete expositions of the matter that we have. The author has collected an extraordinary amount of widely scattered material and made it accessible to the profession. He is an enthusiastic disciple of Brown-Séquard, and probably only under the influence of this master could such a work have been conceived. There is probably no book in any language which treats so fully of the preparation and uses of extracts made from animal organs as this of Dr. Bra.

Medical Record Visiting-List and Physicians' Diary for 1896. New York: William Wood & Co.

The thirty closely printed pages which precede the Visiting-List proper have been revised and brought completely up to date, and the tables of equivalents, posological table, tables of formulæ for various purposes, of poisons and their antidotes, together with many other memoranda on subjects of daily interest to physicians, including artificial respiration, signs of death, directions for emergencies, antisepsis, disinfection, etc., are well chosen.

The arrangement for recording visits and memoranda and cash account is excellent and the general appearance is attractive.

As usual, the "Medical Record Visiting-List" is published in two sizes, for thirty and sixty patients per week, and either dated for 1896 or without dates, so that it may be used indefinitely.

THE BOSTON

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PSYCHICAL RESEARCH AND EUSAPIA PALLADINO.

The critics, noting the degeneracy of the drama, claim that the art of writing opera bouffe is also lost. It is a pity, for the English Society for Psychical Research might afford an excellent subject. That society has published a portentous mass of reports and memoirs, and have spoiled much excellent paper; they have rehabilitated many worthy spooks, and have added much to ghostly literature. They have tried hard to overturn our knowledge of the physiology of the brain by the doctrine of telepathy, and have established that doctrine to their own perfect satisfaction. To be sure, their demonstrations had a cold shower-bath early in the history of the society. The doctrine of telepathy was based at first to a considerable extent upon the remarkable performances of the Creery children. Members of the society investigated them with great diligence, employing their best efforts to detect collusion or fraud, and they decided that there was no collusion, but that the performances could be explained only by telepathic influences. Unfortunately for the society, the children confessed later that they had been fooling the worthy gentleman who had been at such pains to investigate them.

Such little trifles, however, did not daunt the society. Though the experiment had failed the principle remained the same. They still preached the doctrine of telepathy, and went on with their search. At last they discovered a wonderful woman, an Italian peasant, named Eusapia Palladino, who possessed a mysterious power whereby without contact she could move objects, and cause them to touch the investigators, although her own hands were securely held. Lombroso in Italy, Richet and Ochorowicz in France, and Mr. Myers and Professor Lodge in England, were among those who investigated her performances, and the latter reported to the English society that they could find no trickery and that the phenomena could be explained only by assuming that she possessed some mysterious or supernatural force. To the credit of Italy, however, it must be said that three years ago Tamburini[1] failed to find anything remarkable in her proceedings, or anything that did not savor of trickery. And now the members of the English society must again lament their too great credulity and their failure to detect fraud. Mr. Hodgson, the secretary of the American branch of the society, has investigated Eusapia and has demonstrated conclusively that her mysterious powers are due to trickery, and that the trick was the old one of making her visitors believe that she was touching them with both hands when she was really touching them only with one.

The whole affair is certainly pitiable, and it tends to discredit true scientific investigation in the minds of the multitude. It all arises from the almost universal notion, that if a man is distinguished in one line his opinion is of equal value in other subjects. We should recall the melancholy conversion of Professor Crookes to spiritualism, or Zöllner's deception by the slate-writer Slade. The truth is that because a man is an eminent chemist, or a distinguished anthropologist, or a well-known essayist, it is no reason why he should be skilled in legerdemain, yet such men have repeatedly given expert opinions with the utmost gravity. To detect the trickeries of Katy King, or Slade, or Eusapia Palladino, we must appeal to the experts in legerdemain like Maskelyne or Kellar or Hermann, whose opinions can and should outweigh a regiment of the members of the Society for Psychical Research.

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TREATMENT OF MORPHINOMANIA.

The sudden method of withdrawal in healthy patients who are taking an amount of morphine exceeding eight to ten grains per day is favored by Giles de la Tourette.[1] The patient, he contends, should, if possible, be in a hydrotherapic establishment, and under an experienced physician.

Treatment should be begun by regulating the digestive system. After complete isolation of the patient has been secured, he is at first allowed his complete supply of morphine, which is administered hypodermically morning, noon and night. Then the suppression process begins. If the patient has been taking a daily quantity equal to fifteen grains, half that quantity is at once taken away. In some cases, two-thirds of the quantity is withdrawn the first day. The second and third day the allowance is diminished by two grains, and by the fifth day the morphine is suppressed altogether.

The first twelve hours of the demorphinization, there will be no symptom to give disquietude, and the patient will feel relatively well; but at the end of twenty-five hours troublesome accidents will supervene, which, if occurring in the family, will compel a resort to the hypodermic injections, not necessary, however, if the patient be in an establishment where he can be confined.

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[1] Revista Sperimentale di Freniatria, xviii, 411.

[1] Clinical lecture on Morphinomania in Bulletin de Thérapeutique, September 15, 1895.

Syncope is the most serious of the untoward sequelæ of withdrawal, and it is sometimes mortal. If the patient, however, be free from all cardiac complication, the syncope will be of little importance.

To combat the syncope, it will be necessary to give a subcutaneous injection of from one to two grains of morphine. Iced champagne is one of the best remedies to allay vomiting.

Diarrhea is a frequent accident, but the physician should be careful that he does not too speedily suppress it, for the patient gets rid of his poison by the intestine (Sollier). But there are cases where the diarrhea is so intense as to constitute a real morphine-cholera, and must be checked by suitable astringents — capsicum and opium.

The maniacal excitation, the vociferations, the delirium may be combated by sedative baths and douches; and particular attention from the first should be given to the diet, that the wretched physical state of these patients may be amended as speedily as possible.

With regard to the slow method of withdrawal, the results are less satisfactory, for the treatment demands two or three months; whereas, under the other method, the use of the morphine is discontinued at the end of about a week. According to our author, slow demorphinization fails in eight out of ten cases. But the weak and irresolute prefer this mannner of withdrawal. Charcot, who had considerable success with the "slow method," used to treat his patients according to the following rule:

(1) Make a condition that the patient shall sacrifice one-third of his daily dose of morphine at the onset.

(2) Substitute thebaic extract (extract of opium) for the morphine. Thus, for two centigrammes and a half of morphine, give one centigramme and a half to two centigrammes of extract of opium, taking care not to exceed the latter dose; with this bromide of potassium may be associated for the pains in the legs and the general excitation; daily quantities of three, four and five grammes of bromide being sometimes indicated. Conjoin douches and hydrotherapy. As far as possible aim to effect the sudden suppression of the last four or five centigrammes of morphine.

After arriving at the end of the demorphinization, drop as speedily as possible the opium and bromides, which are no longer needed. It is then a matter of only ten or twelve days to arrive at the complete end of the treatment.

The treatment pursued by Gilles de la Tourette is a modification of the rapid method of Erlenmeyer, described in a former number of this Journal. Erlenmeyer claims to have accomplished the weaning process in most of his subjects in from a week to ten days. This method, like the abrupt-withdrawal plan of treatment, is open to the reproach of being cruel, but it does not seem possible to bring about the complete emancipation of the morphine-taker by any means which does not entail more or less suffering.

THE WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE.

A new Laboratory of Clinical Medicine was opened on December 4th, in connection with the Hospital of the Medical School of the University of Pennsylvania. This laboratory is the gift of Prof. William Pepper, in memory of his father. The original gift was $50,000, of which sum the half has been used for the building and the half set aside for an endowment. Dr. Pepper, in an interesting letter describing the influences and motives which turned his thoughts to the gift which he made, estimates that an endowment fund of at least $200,000 will ultimately be required to pay the necessary salaries, to provide annual stipends to a certain number of the associates, to supply the costly apparatus required, to issue the numerous publications resulting from the researches therein conducted, to purchase the necessary journals and works of reference, to meet the current expenses; and the letter continues: "While I shall reckon it a privilege to supply as much of this sum as my continued professional labors may render possible, I hope it is not unseemly to indicate two directions in which contributions might be made with great effect to promote the work to be here conducted. A fellowship in clinical medicine may be established by a gift of $10,000, subject to the statutes of the university, the income of which would defray the living expenses of the incumbent and would also provide a fair sum to maintain his place in the laboratory. A gift of $5,000 would yield income sufficient to meet either one or the other of these objects as might be indicated by the donor. To any one interested in the study of any special disease or group of diseases, such as tuberculosis or heart disease or infectious fevers — all of which destroy so many thousands of precious lives annually — the advantages of establishing a special research fund must seem obvious. I earnestly trust that such endowments will gradually accumulate around this laboratory."

Sections Sixth and Seventh of the deed of gift read as follows:

"*Sixth.*— That the director and assistant director of said laboratory shall at all times be appointed annually by the board of managers of the University Hospital upon the nomination of the professor of the theory and practice of medicine and of the professor of clinical medicine.

"*Seventh.* That the purpose of said laboratory shall be to promote the interests of the patients in said University Hospital by the prosecution of minute clinical studies and original researches, and to advance the interests of science by the publication of the results of such work. It is accordingly stipulated that at no time shall any teaching be given therein to undergraduate students, or to any students except to *our* own graduates or the graduates of other approved medical schools, whose curriculum is at least of equal length and grade with that of the medical department of the University of Pennsylvania. Provisions will also be made for advanced workers."

Dr. John S. Billings, now Professor of Hygiene in the Medical School of the University, made an address which we have before us, at the request of Dr. Pepper, formally presenting the laboratory to the University Hospital. In the course of his address he refers to the gift as "unique in this, that it is made for the specific purpose of promoting and stimulating original research and improvement in methods of diagnosing and treating the diseases of human beings and of giving advanced and special practical instruction in the new methods to post-graduates. While a few hospitals have rooms set apart for chemical, microscopical and bacteriological investigations, no hospital, so far as I know, has ever before received a specific gift for the construction and maintenance of a separate building to be devoted entirely to such purposes and to post-graduate teaching of clinical laboratory methods." It seems to us hardly necessary to claim quite so much for Dr. Pepper's foundation, though technically the statement may be correct. The generous nature and wise purpose which his gift and plans disclose are sufficiently evident without a statement which does less than justice to laboratories already attached to other hospitals and medical schools. Whether such a laboratory is styled a Laboratory of Clinical Medicine or of Bacteriology and Pathology is really a matter of nomenclature and of small moment. The subjects investigated and the ultimate objects sought will be much the same. The study of the bacillus of tuberculosis necessarily leads to a study of the action of preventive and curative agents.

The other closing paragraphs of Dr. Billings's address may well be brought to the notice of those rich men who desire to do something for their fellowmen and establish and leave behind them some enduring memorial to others or to themselves. In just and true words he says of Dr. Pepper's provisions:

"Broad and far has been his outlook in thus providing for the future a heritage of power, which mildew, flame and frost cannot harm. It is not a statue, or carving, or memorial arch that he has given, things that will blacken and moulder and crumble as the centuries roll by, until the mills of the gods shall have ground them to dust. It is a perpetual well-spring of force, a storage battery which will fill itself and give out warmth and light and motion so long as this institution of learning shall exist on the earth. He says, and says it with authority, find me the means of making the lives of men longer and more efficient, of putting aside the plague which has destroyed our fathers and brothers and threatens to consume our children; his demand is not for the fruit which is known and harvested, but for that of regions yet unknown and unexplored, for which he provides the seed, for charts of dangerous bays and coast-lines still unsounded and not yet triangulated."

Here is, indeed, a vineyard in which the harvest should be great, but in which the laborers are, and will be, far too few.

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A BILL TO ESTABLISH A BOARD OF EXPERT MEDICAL WITNESSES.

Several prominent medical men have assisted in the drafting of a bill to be introduced in the New York Legislature at its approaching session, which provides for the creation of a non-partisan board with which shall be lodged the right to give expert medical testimony in the courts of the State. The members of this board are to be appointed by the Governor, subject to the approval of the Senate. The province of the board will be to act in the capacity of instructors and advisors of the courts. It will be large enough to provide amply for all criminal trials, and the quorum named in the bill will be sufficiently small to allow sections of the board to act with the courts in various localities. The board, which it is proposed shall be composed of the most expert alienists, will have power to examine with reference to the sanity of any accused person, and to call for any evidence throwing light upon the case. When any section of the board disagrees upon the questions involved, the whole board may be called together for a decision. No physician who is not a member of the board will be allowed to testify, except as to absolute facts, but physicians who are not members may appear before the board and give evidence.

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MEDICAL NOTES.

The St. Louis Academy of Medical and Surgical Sciences. — On November 6th, 1895, the St. Louis Academy of Medical and Surgical Sciences was organized. The constitution of the society subscribes to the code of ethics of the American Medical Association. The membership is limited to fifty.

Tea Cigarettes. — According to *Cassell's Saturday Journal*, the dangerous habit of smoking green-tea cigarettes has fastened upon the women of England, who now smoke their five o'clock tea, instead of drinking it. The effect upon their nervous systems is said to be extremely bad.

Zoolatry. — This word has been invented in England to express the mental delirium under which certain anti-vivisectionists labor, and according to the *British Medical Journal* exactly expresses the state of mind of the anti-vivisection fanatic, who makes the feelings of animals the object of a tender regard which he is far from showing for those of his fellow-men.

The Sale of Antitoxins. — It is reported that the French government has found it necessary to place an embargo upon the sale of serums and other such products, which cannot be distributed until they shall have received official sanction, granted only after examination of the product by a committee of the Academy of Medicine.

Foreign Medical Men in Paris. — According to some statistics recently published by M. Bertillon, there are about 521 foreign medical men practising in Paris. This number represents more than one-sixth of the total number of practitioners in the French capital, which has been estimated at 2,922. It has been ascertained that there are 180,000 aliens residing in Paris, consequently the proportion of foreign medical men to the alien population is nearly three per thousand. On the other hand, the ratio of French practitioners to the French population is only about one per thousand.

PHYSICIANS MUST TESTIFY. — It was recently decided by Judge Smith at the United States Circuit Court in session at Battle Creek, Mich., that a physician's relations to his patients are not sacred, and that he can be compelled to testify in regard to the ailments with which his patient is afflicted. The case in question was the suit of a life-insurance company to annul a policy of $20,000 which had been issued to a citizen of Detroit on the ground that the applicant had misrepresented his physical condition. A physician who had previously treated him at first refused to testify but was afterward compelled to do so by the decision of the Court.

A JOURNAL OF EXPERIMENTAL MEDICINE. — In January, 1896, will appear the first number of the *Journal of Experimental Medicine*, a periodical devoted to original investigations in physiology pathology, bacteriology, pharmacology, physiological chemistry, hygiene and practical medicine. A wide correspondence has convinced the promoters of the new enterprise that enough original work of merit and importance is now produced to warrant the establishment in this country of a journal devoted to the publication of original memoirs. No periodical of this character is published in the United States, and the medical investigators of this country have published much of their best work in the scientific journals of Europe. Dr. William H. Welch, Professor of Pathology in the Johns Hopkins University is to be the editor of the new journal, and with him will co-operate a board of twelve associate editors as follows: Three for physiology, three for pathology, three for pharmacology, and three for medicine. In addition a considerable number of investigators and teachers have consented to assist as collaborators. The *Journal of Experimental Medicine* will appear for the present, quarterly. The annual volume will contain from six to seven hundred pages, with many plates and diagrams.

NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During week ending at noon, December 11, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 131, scarlet fever 20, measles 7, typhoid fever 12.

PROSECUTIONS UNDER THE MEDICAL REGISTRATION LAW. — Last week John Therrein of 40 Isabella Street, Boston, was fined one hundred dollars by Judge Brown in the Municipal Court for using the title of doctor without registration. He appealed, and was held in $500 for the Superior Court. The case of T. M. Curtis, who is charged with a similar offence at 31 Common Street, was again continued to January 15th.

NOMINATION OF PROFESSOR RICHARDS AS TRUSTEE OF THE MASSACHUSETTS HOSPITAL FOR DIPSOMANIACS. — Professor Robert H. Richards of the Massachusetts Institute of Technology has been nominated by Governor Greenhalge for trustee of the Massachusetts Hospital for Dipsomaniacs, in place of Herman M. Burr, resigned.

NEW YORK.

THE NEW YORK ACADEMY OF MEDICINE. — At a meeting of the New York Academy of Medicine held December 5th, Dr. James Irwin Hance read a paper entitled, "Study of the Infectiousness of the Dust in Adirondack Cottages." The following nominations were made for Vice-President, Drs. Egbert H. Grandin, Virgil P. Gibney and Robert W. Taylor.

DIPHTHERIA IN A NORTH GERMAN LLOYD STEAMER. — It is reported from Braddock, Pa., that several cases of diphtheria have developed among some of the passengers on the North German Lloyd steamship *Kaiser Wilhelm II*, which arrived at the port of New York on November 29th. The vessel left Bremen on the 19th and Southampton on the 21st, and she had clean bills of health from both these places. At the New York Quarantine, when she arrived, one case of diphtheria was found among the steerage passengers and the patient, a little girl, was sent to the Willard Parker Hospital. The other steerage passengers after careful examination were released.

SMALL-POX ON A NAPLES STEAMER. — A young girl, nineteen years old, was found to be suffering from small-pox on board the Anchor-line steamship *California*, which arrived from Naples on December 1st. Four hundred and thirty of the steerage passengers were re-vaccinated, and 47 of them were sent to Hoffman Island for observation.

ARREST FOR CONDUCTING A PRIVATE INSANE ASYLUM WITHOUT A LICENSE. — John Louden, the proprietor of a well-known private insane asylum at Amityville, Long Island, has been arrested for conducting the institution without a license, and held in $250 bail to appear for trial. A commission, consisting of Drs. Macumber, Little and Tracy, was appointed to examine the inmates of the asylum, found that they were all of unsound mind, and by order of Justice Gayner they were transferred to the State Insane Asylum at Flatbush.

DEATH OF DR. HIRAM M. EDDY. — Dr. Hiram M. Eddy, one of the best known physicians in Jersey City, died at St. Mary's Hospital, Brooklyn, on December 2d.

DEATH OF DR. GIDEON L. KNAPP. — Dr. Gideon Lee Knapp, a graduate of the College of Physicians and Surgeons in the year 1878, died in New York on December 7th. He was taken with typhoid fever while on a shooting trip on Long Island about two months ago. The attack was a severe one, but he apparently came successfully through it and was believed to be out of danger until within a week before his death, when pneumonia set in. Dr. Knapp was a man of wealth and a great lover of all out-door sports; being especially noted for his skill as a wing shot. He was very popular, and belonged to a number of the most prominent clubs in the city. About five years ago he became interested in the turf, and at the time of his death was the proprietor of the Oneck Stable, containing many noted horses. Dr. Knapp was a passenger on the Manhattan Beach train, which was wrecked at Parkville two or three years ago with such serious loss of life, and he did noble service in attending to the injured.

A Low Mortality Rate.— The mortality during the week ending December 7th, reached the exceedingly low figure of 641, of this total, 103 deaths, or about one-sixth of the entire number were caused by pneumonia. There were 22 deaths from diphtheria. In Brooklyn 150 cases of diphtheria were reported, with 31 deaths.

◆

Miscellany.

BANQUET AND PRESENTATION IN HONOR OF JOHN S. BILLINGS, M.D., LL.D.

A dinner was given at the Hotel Bellevue, Philadelphia, November 30th, in honor of John S. Billings, by the American subscribers to the Billings Testimonial. Dr. S. Weir Mitchell, as chairman of the Committee, presided, and having made the presentation speech, placed in Dr. Billings's hands a silver box containing $10,000, and having engraved upon it, "To John S. Billings, from 259 physicians of the United States and Great Britain in grateful recognition of his services to medical scholars." On the side of the box there is, in Latin, a statement to the effect that he who has made a catalogue of a great library has created a memory of the wisdom and learning of the past.

In conclusion Dr. Mitchell said: "In offering this box to my old friend, and the gentleman you desire to honor to-night, I would say that while the silver box contains this practical recognition of his services it also contains something more, as my imagination figures it. You all remember that phrase of Dr. Johnson's 'Wealth beyond the dreams of avarice.' There is, as I think of it, within this box, for an imaginative man, that wealth which represents the good feeling, the friendly opinions, the thankfulness, of the scholarship of two continents. Also I may say that this wealth represents a noble avarice, of that kind which my friend has shown all his life — a desire to be loved and respected by those in our profession whom men most rightly honor."

Prof. J. M. Da Costa spoke in behalf of the committee, and referred to the invaluable services which Dr. Billings has rendered to the entire medical world in the creation of the "Index Catalogue of the Surgeon-General's Library," and of the unselfish spirit in which the work had been begun and carried to its completion, and of the wide recognition and appreciation of his work in the centres of medical learning all over the world.

Dr. Billings, in his speech of acceptance, expressed his appreciation of the co-operation of Dr. Chadwick, of Boston, and Dr. Fletcher, his assistant in the work of compiling the catalogue.

Dr. Chadwick, of Boston, assured the company that he shared the feelings of Rufus Choate who, in addressing a similar audience in the same city many years ago, said: "It gives me great satisfaction to honor by my presence here to-night the two most distinguished sons of Pennsylvania — Benjamin Franklin, of Massachusetts, and Robert Morris, of New York." Dr. Chadwick then spoke of the energy, industry, sagacity and discrimination displayed by Dr. Billings in the conduct of the great enterprise which he had just brought to completion, and in conclusion paid a well-deserved tribute to Dr. Robert Fletcher, as the most distinguished collaborator with Dr. Billings in the "Index Catalogue," and the actual editor of the *Index Medicus*.

In responding, Dr. Fletcher spoke of the pleasant relations with Dr. Billings during the twenty years association in their common task, and gave Dr. Billings the entire credit for the conception and execution of the work.

Dr. A. Jacobi spoke of the inestimable value of Dr. Billings's services to his profession and to mankind, and of the propriety of the celebration of the conclusion of Dr. Billings's great work at Washington being held in Philadelphia, the city which is to be the scene of his future labors.

Dr. William Osler announced that a sufficient fund had been raised to have Dr. Billings's portrait painted and presented to the Army Medical Museum at Washington. He also read a letter from Surgeon-General George M. Sternberg, expressing pleasure at the fact that such a handsome sum had been raised for Dr. Billings, and that his portrait was to be painted by an artist of ability, adding, that the portrait, when completed, would be gladly received.

The presentation and dinner were an adequate expression of the gratitude of the medical profession to Dr. Billings for his unselfish and devoted labors for their good. It was quite fitting that the celebration should be held in Philadelphia, where the proposal originated, and where Dr. Billings is to continue his labors as Professor of Hygiene in the University of Pennsylvania.

◆

THE DIAGNOSIS OF SALIVARY CALCULUS.

Lindemann,[1] states that salivary calculi cannot be considered of rare occurrence, since he has found reports of 196 cases. He reports a case in which the diagnosis was so complicated by the peculiarity of accompanying symptoms as to be at first obscure. A married woman, aged fifty, consulted him for a tumor beneath the tongue which she feared was malignant. The fear of being told she had a malignant tumor had prevented her for a long time from seeking medical advice. The tongue, especially on the left side, was markedly swollen and edematous; the left sublingual glands were also swollen and of a dark-red color on the surface, this coloration being apparently due to a network of swollen and tortuous veins. The tumor felt hard and cartilaginous to the examining finger. The submental lymphatic glands were considerably swollen, the surrounding connective tissue was infiltrated, and the skin was markedly reddened. There was no elevation of temperature, but the patient complained of frequent headache and sleeplessness, together with thirst, and loss of appetite. She stated that the swelling under the tongue had appeared six to eight months before and had gradually increased in size, that it was painful, and interfered with the movements of the tongue. Household remedies had not relieved her, and she thought she had a malignant trouble, and consulted her physician because she thought the tumor was going to break out on the outside of her neck. The appearance and feel of the tumor suggested malignant disease, though an exact diagnosis could not be arrived at. Puncture with a hypodermic needle in the region of the left sublingual caruncle established the diagnosis of salivary calculus, which was removed through an incision in the floor of the mouth. The stone was club-shaped, and measured three centimetres in length and about one centimetre in thickness, weighed three and five-tenths grains and was of ivory-like hardness. Chemical analysis showed a close resemblance to bone or tooth substance.

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[1] Deutsche med. Woch.

The diagnosis of salivary calculus is described as easy in most text-books, although cases are reported where they have been erroneously diagnosed as dermoid, lipoma, ranula, or malignant tumor.

The etiology of these tumors is somewhat doubtful. The etiological possibilities suggested by Moreau[2] are these:

(1) The foreign bodies introduced by accident.
(2) Bits of tartar introduced from the mouth.
(3) Inflammatory processes.

The latter seems to Lindemann the more probable theory, and he suggests that the action of the bacteria of the mouth (leptothrix buccalis, etc.), as suggested by Klebs, may have something to do with these processes. According to Tillmans's view the so-called salivary calculi bear the same relation to the salivary glands that the tartar does to the teeth. "Many individuals are known to secrete saliva which is very rich in calcareous matter. Such individuals deposit, therefore, more tartar on the teeth, and a portion is more likely to be deposited within the salivary ducts."

Correspondence.

SHOULD DOCTORS WEAR BEARDS?

Berlin, Coos County, N. H., December 6, 1895.

Mr. Editor: — In these days of microbes, bacilli, and crawling, creeping and flying things that find a resting-place for development of diseases in the human system, coming from the air we breathe, liable to assault the weak and strong from the dust of the electric or steam cars, the carpets, curtains, furniture or walls of hotels and house rooms, or from any place where they may have lain for years and been dislodged to mingle with the air; when boards of health are by law required to quarantine families, ships and houses, where contagious diseases are known; when the panic which the incursion of diphtheria, scarlatina, etc., in a community makes every mother's heart quail, *Should doctors wear beards?*

I am speaking from twenty-two years' experience in the practice of the profession. I wear a beard, and grant you that probably, like many of my professional brothers, it is a comfort to stroke it and look wise while making a doubtful diagnosis. It is a comfort in the cold, bleak days of winter, when the breath from the grand but icy Presidential Range of the White Mountains sweeps through our valley at an eighty-mile-per-hour rate, with the thermometer from zero to 40° below zero, to have a beard. I cultivated mine sedulously after graduation, so that I might lose the title of "the young doctor."

I have spoken of some of the comforts, and may be advantages, of wearing a beard. Twenty-five years ago, while a student, I visited a case of diphtheria with my preceptor. It was a child between five and six years old, who would struggle in the hands of the nurse and fight every attempt to make applications to the diseased surfaces. During the struggle the child coughed and threw out onto the doctor's beard some mucus. He wiped it off carefully, made the applications to the throat, and rode home eight miles in the cold. In three days after this he was attacked with diphtheria of severe type, followed by paralysis so severe that for more than a year he was unable to do his work, and the community lost his valuable services. In these days when the doctor takes so many precautions, is it not possible that microbes of contagious diseases may be carried by the beard, and as he bends over some little patient leave the seeds of these destroyers of life?

Again, in scarlatina, especially during the stage of desquamation, may not the branny scales find a lodgement in the beard and be a source of danger in the same way as above? It is argued that there would be danger of an attendant who is with the patient nearly all the time, but the doctor is in the house so short a time he is practically free from acquiring any condition that would be a menace to others. Let us see.

In the "American Text-Book of the Diseases of Children," in the article on Scarlatina by Dr. Hatfield, of Chicago, will be found a case of Dr. Holland's where "the virus of scarlatina survived two generations, being packed away in clothing in a chest for thirty-five years; at the end of which time it communicated the disease to a grandchild for whom some of his grandfather's clothing was made over."

Of another case Dr. Hatfield says: "The disease remained hidden in a fur cloak packed away for more than a year, and was then communicated to an entire logging-camp, isolated for the winter in the wilds of Northern Michigan."

J. Lewis Smith relates the case of a librarian in a Sunday-School who contracted the disease from books returned from an infected tenement house. One month after his recovery the room in which he had been sick, and his clothing, were disinfected by burning sulphur; and yet he succeeded in carrying the disease personally to his sisters after a journey of three hundred miles to an isolated town to which they had been quarantined.

Surgeon Brooks, U. S. A., gives an instance of a child which evidently developed the disease spontaneously; but upon investigation it was found that one of the domestics had nursed a case of scarlet fever in a distant city a year before. Some of the clothing which she had worn at the time was packed away in a trunk and the child was present when they were unpacked and handled some of them.

Palante gives the case of a mother in contact with a patient "but a moment," who returned immediately to her home at a distance of six miles, but whose contact had been long enough to collect and convey the disease to her children.

The handling of furs, woollen garments, bed-clothing, curtains, etc., has repeatedly conveyed the disease. Cold does not affect it; so the fact that the physician rides for miles after visiting a patient with scarlet fever may not be a safeguard.

I note these diseases, and they are not alone the dangerous ones; but if there is so much risk in this class of diseases, should not the profession consider if they themselves might not possibly be an element in the distribution of micro-organisms? We note with what care the surgeon disinfects his hands, arms, instruments, all that comes in contact with the patient in a surgical case; but the beard of the doctor attending diseases and so easily communicable as some are, how many thoroughly disinfect that before visiting the next patient?

Surely we should take every precaution, or *not wear beards.*

Yours truly,
F. A. Colby, M.D.

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[2] Thiele, Diagnose und Behandlung der Speichelsteine, Inaugural Dissertation, Jena, 1893, S 6.

METEOROLOGICAL RECORD,

For the week ending November 30th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S..24	30.04	44	49	38	85	90	88	N.W.	N.W.	10	8	R.	O.	.14
M..25	30.30	39	45	33	75	98	86	E.	E.	18	12	O.	O.	.05
T..26	29.83	56	67	44	94	95	94	E.	S.W.	5	36	O.	R.	.46
W..27	30.42	44	48	38	54	91	72	N.W.	N.W.	15	9	F.	O.	.68
T..28	30.60	41	50	32	64	81	58	W.	S.W.	7	8	C.	O.	—
F..29	30.22	43	51	35	81	86	84	W.	S.W.	6	6	O.	O.	—
S..30	30.14	28	44	32		84	28	N.	N.	9	16	O.	C.	—
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 30, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,892,332	683	228	11.11	20.55	1.34	1.20	5.10
Chicago . . .	1,678,967	—	—	—	—	—	—	—
Philadelphia .	1,164,000	417	142	11.52	11.76	1.92	1.44	7.44
Brooklyn . .	1,100,000	357	123	18.76	14.84	.84	1.12	13.16
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	494,205	201	60	11.27	14.70	.49	.98	8.82
Baltimore . .	496,315	180	61	—	—	—	—	—
Cincinnati . .	336,000	104	26	7.68	6.72	1.92	—	3.84
Cleveland . .	314,537	102	32	13.66	15.68	1.96	.98	12.74
Washington .	275,500	107	22	8.37	21.39	1.86	3.72	.93
Pittsburg . .	238,617	—	—	—	—	—	—	—
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	31	6	16.10	12.88	3.22	6.44	—
Charleston . .	65,165	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	31	9	16.15	16.15	3.23	—	12.92
Fall River . .	88,020	29	12	24.15	6.90	17.25	3.45	3.45
Lowell . . .	84,359	29	6	6.90	6.90	—	—	6.90
Cambridge . .	81,519	30	5	23.33	—	—	3.33	20.00
Lynn	62,355	21	4	4.76	14.28	4.76	—	—
New Bedford .	55,254	20	5	15.00	15.00	5.00	5.00	5.00
Springfield . .	51,534	13	1	7.69	15.38	—	7.69	—
Lawrence . .	52,153	15	7	20.00	—	—	6.66	6.66
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	11	2	9.09	9.09	—	—	9.09
Brockton . .	33,157	—	—	—	—	—	—	—
Haverhill . .	30,185	4	—	25.00	—	—	—	—
Malden . . .	29,706	9	1	22.22	—	11.11	11.11	—
Chelsea . . .	31,295	10	2	—	20.00	—	—	—
Fitchburg . .	26,394	—	—	—	—	—	—	—
Newton . . .	27,622	7	1	—	—	—	—	—
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	12	4	33.33	—	—	—	—
Waltham . .	20,877	10	4	—	10.00	—	—	—
Quincy . . .	20,712	5	0	—	20.00	—	—	—
Pittsfield . .	20,447	3	1	33.33	—	—	33.33	—
Everett . . .	18,578	6	1	16.66	—	—	—	16.66
Northampton .	16,738	2	1	—	—	—	—	—
Newburyport .	14,554	4	2	50.00	50.00	50.00	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,514; under five years of age 785; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 333, acute lung diseases 367, consumption 317, diphtheria and croup 187, typhoid fever 44, diarrheal diseases 43, measles 24, scarlet fever 11, whooping-cough 9, malarial fever 6, cerebrospinal meningitis 5, erysipelas 4.

From measles New York 14, Brooklyn 4, Providence 3, Baltimore 2, Philadelphia 1. From scarlet fever Brooklyn, Boston and Nashville 2 each, New York, Philadelphia, Baltimore, Cincinnati and Cleveland 1 each From whooping-cough New York 4, Brooklyn 2, Philadelphia, Cincinnati and Providence 1 each. From malarial fever New York, Brooklyn and Washington 2 each. From cerebro-spinal meningitis New York, Baltimore, Providence, Lawrence and Haverhill 1 each. From erysipelas Brooklyn 3, Baltimore 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530, for the week ending November 23d, the death-rate was 19.0. Deaths reported 3,863; acute diseases of the respiratory organs (London) 327, measles 208, diphtheria 111, diarrhea 69, fever 55, whooping-cough 54, scarlet fever 50, small-pox (West Ham) 1.

The death-rates ranged from 32.3 in Blackburn to 12.6 in Brighton; Birmingham 19.8, Bolton 17.9, Bradford 17.3, Croydon 13.2, Gateshead 17.4, Hull 17.8, Leeds 17.7, Leicester 16.1, Liverpool 27.2, London 17.7, Manchester 23.0, Newcastle-on-Tyne 20.1, Nottingham 16.1, Sheffield 21.9, Sunderland 15.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 30, 1895, TO DECEMBER 6, 1895.

Captain William H. Arthur, assistant surgeon, is relieved from duty at Fort Columbus, New York, and ordered to Fort Myer, Virginia, for duty.

The leave of absence granted **First-Lieut. John S. Kulp**, assistant surgeon, is hereby extended one month.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 7, 1895.

George C. Hubbard, assistant surgeon, detached from instruction at the Naval Laboratory, New York, and ordered to the "Vermont."

E. R. Stitt, passed assistant surgeon, detached from the "New York" and ordered to the C. S. S. "Bache."

G. H. Barber, passed assistant surgeon, detached from the "Bache" and ordered to the "New York."

SOCIETY NOTICES.

Suffolk District Medical Society.— The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place on Wednesday, December 18th, at 8 P. M.

Papers: Dr. John Lovett Morse, "Report of Two Cases of Scurvy."

Dr. Henry Jackson, "Cases of Eclampsia of Doubtful Etiology." **John L. Ames, M.D.**, *Secretary.*

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, December 16th, at 8 o'clock.

Dr. F. H. Davenport will report "Some Observations on Malignant Disease of the Uterus" The paper will be discussed by Drs. Wm. H. Baker, M. H. Richardson, J. W. Elliot and G. Haven.

Dr. M. H. Richardson and Dr. G. L. Walton will present a paper entitled "Further Observations on the Treatment of Spasmodic Torticollis."

James G. Mumford, M.D., *Secretary.*

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Thursday evening, December 19th, at 8 P. M., by **Dr. J. H. McCollom.** Subject: "The Relation of Bacteriology to Preventive Medicine." The profession are invited.

BOOKS AND PAMPHLETS RECEIVED.

Sanitary Engineering. By Wm. Paul Gerhard, C.E. Reprint. 1895.

Proceedings of the Orleans Parish Medical Society for 1894, Vol. II.

Removal of Ingrowing Toe-Nail; a Simplified Operation by Means of a New Instrument. By A. H. Meisenbach, M.D., St. Louis, Mo. Reprint. 1895.

Medico-Chirurgical Transactions published by the Royal Medical and Chirurgical Society of London. Volume the seventy-eighth. (Second series, volume the sixtieth.) London: Published by the Royal Medical and Chirurgical Society, Longmans, Green & Co. 1895.

Spectacles and Eyeglasses, their Forms, Mounting and Proper Adjustment. By R. J. Phillips, M.D., Adjunct Professor of Diseases of the Eye, Philadelphia Polyclinic and College for Graduates in Medicine; Ophthalmic Surgeon to the Presbyterian Hospital in Philadelphia, etc. Second edition, revised, with 49 illustrations. Philadelphia: P. Blakiston, Son & Co. 1895.

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BENZOSOL IN DIABETES.

In a paper on this subject, Dr. J. Blake White, of N. Y., Physician to the City Hospital, says, "BENZOSOL certainly manifests a most potent influence in controlling elaboration of Sugar."

Reprint of Dr. White's interesting paper sent upon request.

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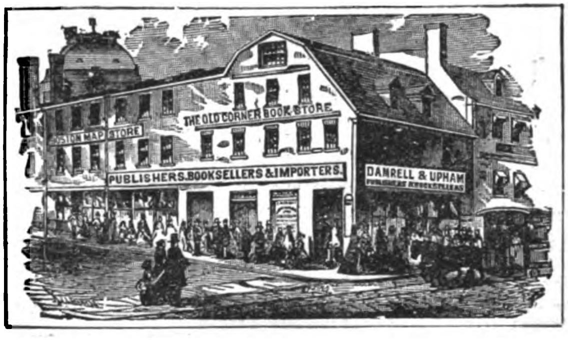

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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum.................... 19
Antikamnia Chemical Company...Antikamnia 23
Apollinaris Co.................... 14
Ayer's Hygienic Coffee.................... 26
Baker, L. W., M.D.... ....Riverview 19
Baker, Dr. W. H....................Caro 19
Battle & Co. ....Bromidia 8
Bellevue Hosp. Med. Col..... Sessions of '94-95 16
B. H. R. Distilling Co.................... 29
Boehringer & Soehne..............Ferratin 12
Borine Chemical Co....................20, 24
Bowdoin College..........Medical Department 16
Bowker, Dr. E. M.......... ......Vaccine Virus 3
Boylston Medical Prize Questions............ 2
Castle, W. & Co...............Steam Sterilizer 17
Censors' Examination.............. 2
Channing, Dr. Walter.................... 19
Chauncy Hall School.................... 31
Cocke, Dr. James R.................... 19
Codman & Shurtleff.....Surgical Instruments 11
Coll. of Physicians and Surgeons, Boston... 16
Crittenton, C. N....Liquid Beef Tonic, etc. 4, 13, 25
Cutter, Dr. W. P 19
Dartmouth College, N. H....Med. Department 16
Douglass, Dr. DeF ....Artificial Limbs 3
Edes, Dr. R. T.................... 19
Farwell & Rhines..............Dyspepsia Flour 2
Feeble-Minded Youth, Inst. for..Barre, Mass. 19
Fisk & Arnold..................Artificial Limbs 3
Flood, Dr. Everett.................... 19
For Sale.................... . 2
Fougera, E. & Co..............Imp'g Pharmacists 9, 27
Gear, J. Frank ....Surgical Instruments 7
Goldthwaite, Dr. S. V 19
Graham, Dr. Douglas......Treatise on Massage 25
Greene, Dr. E. M........Examinations of Sputa 19
Harvard Baby Food Co.................... 20
Harvard University........Dental Department 16
Harvard University.......Medical Department 32
Jaeger..........................Underwear 25
Johnson & Johnson......................Kola 11
Just's Food Co.................... 5
Lambert Pharmacal Co..............Listerine 21
Leedom, Charles..............Nuclein Solution 7
Lehn & Fink....................Mfg. Chemists 6
Lilly, Eli & Co................Manfg. Chemists 13
Lloyd, Andrew J. & Co. .....Manufg. Opticians 2
Londonderry Lithia Water.................... 22
Long Island College Hospital.................... 16
Macrie, Dr. L. V. G. .... Sanitarium 19
Marks, A. A....................Artificial Limbs 21
Martin, Dr. F. C..................Vaccine Virus 31
McArthur Hypophosphite Co.................... 20
McElroy, P. J..................Glass Syringes 3
Medico-Chirurgical College 16
Merrell, The Wm. S., Chemical Co............ 14
Norton, Dr. Eben C........ ....Card 19
N. Y. Polyclinic and Hospital.................... 16
N. Y. Post-Graduate School and Hospital.. 17
Oakland Chemical Co.......Hydrogen Dioxide 30
Pabst Brewing Co.................... 7
Patch, E. L. Co............... .....Lithia Tablets 26
Peake & Buzzell............Surgeons' Supplies 25
Phillips Chemical Co., The Charles H....... 1
Pinaud, Ed.....................Sels Romains 18
Planten, H., & Son......................Capsules 3
Polk, R. L. & Co.......Med. and Surg. Register 28
Purdue Frederick Co., The.................... 7
Removal...... 2
King, Dr. Allan Mott.........Nervous Diseases 19
Rosse, Dr. Irving C.................... 19
Russell, Dr. F. W ....Card 19
Schulze-Berge & Koechl.......Migranin, etc. 3, 31
Scott & Bowne.................... 4
Stedman, Dr. Henry R......................Card 19
Stillings, Dr. L. C. ....Card 19
Strong, Dr. S. E..................Sanitarium 18
Thayer, Henry & Co.................... 20
Theodore Metcalf Co......................Coca 10
Twitchell, Dr. George B..................Card 19
Tyree, J. S. ....Litmus Pencil 5
Umpleby, J. T. ....Photography 2
University of Vermont,.................... 17
Vapo-Cresolene Co.................... 5
Walker Pharmacal Co..............Phytoline 8
Walnut Lodge Hospital.................... 1
Warner, Wm. R., & Co.................. .Pills, etc. 15
Waterman, Dr. Thomas..Animal Vaccine Virus
Weeks & Potter Co. ....Quinona 30
Wheeler, Dr. T. B................Phosphates 24
White, Dr. Walter H.....................Card 19
Willard, Dr. A. J.........................Card 19
Woman's Medical College, Baltimore....... 1
Woman's Med. Coll..of the New York Infirmary 1
Woodward, L. F. ....Stammering 1
Yale University...........Medical Department 1

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PAGE

ORIGINAL ARTICLES.

The Importance of Frequent Observations of Temperature in the Diagnosis of Chronic Tuberculosis. *By Walter Channing, M.D.*, Brookline, Mass. 609
Immunity and Cure. *By E. Stanley Abbot, M.D.*, Assistant Physician, McLean Hospital, Waverley, Mass. 613

CLINICAL DEPARTMENT.

A Large Uterine Fibroid Complicated by Stone in the Bladder; Abdominal Hysterectomy and Litholapaxy; Recovery. *By Maurice H. Richardson, M.D.*, Visiting Surgeon to the Massachusetts General Hospital; Asst. Prof. Clin. Surgery, Harvard University... 619
Pulmonary Infarction. A Case Occurring Six Days after Hysteropexy; Thrombosis of the Left Iliac Vein; Pneumonia; Death; Autopsy. *By Edgar Garceau, M.D.*, Boston, Surg. to Out-Patients, Free Hospital for Women 620
Liquor Amnii Escaping from an Unoccupied Subdivision of Fetal Membranes. *By Chas. H. Morrow, M.D.*, Gloucester, Mass. 621
Septa Vaginæ: Two Cases Observed in Private Practice. *By F. Bowditch Chapman, A.M., M.D.*, Middleton, Mass. 622

REPORTS OF SOCIETIES.

Boston Society for Medical Improvement. *J. G. Mumford, M.D.*, Secretary 623
Anatomical Specimens. — Oral Communications.— The Importance of Frequent Observations of Temperature in the Diagnosis of Chronic Tuberculosis. — Pathological Specimens.
Mississippi Valley Medical Association. Twenty-First Annual Meeting, Detroit, September 3–6, 1895. (Continued.) 626
Two Successful Operations for Traumatic Insanity. — Chronic Seminal Vesiculitis with Hemorrhage.— The Use of Dry Heat of High Temperature in the Treatment of Joint Diseases.— Ulcers of the Leg: All can be Cured. — How to Diagnosticate Sexual Derangements in the Male. — An Instrument for Securing Asepsis in Bladder and Prostate Operations.— The Element of Vascular Compression in Fracture Treatment. — The Significance of Fissure Fractures of the Articular Ends of the Long Bones.— Imbrication or Lap Joint Method — a Plastic Operation for Hernia. — Further Observations on the Radical Cure of Rupture by the Intrapelvic Method, with Illustrative Cases.— Syphilis and its Treatment. — Surgical Treatment of Hemorrhoids.— Club-Foot.— Vaginal Castration.— A New Phase of Celiotomy.—Results of Five Years' Experience with Intra-Abdominal Shortening of the Round Ligaments.— The Present State of our Knowledge of Cancers and Tumors.— The Paranoiac a Menace to Society.

RECENT LITERATURE.

Twentieth Century Practice. Edited by Thomas L. Stedman, M.D. New York: William Wood & Co. 1895. 629
The Cell; Outlines of General Anatomy and Physiology. By Dr. Oscar Hertwig. Translated by M. Campbell and edited by Henry J. Campbell, M.D. London: Swan, Sonnenschein & Co. New York: Macmillan & Co. 1895. 629
Handatlas der Anatomie der Menschen. Von Werner Spalteholz. Leipzig: Verlag von S. Hirzel. 1895 630
Elementary Technique in Histology and Bacteriology. By Ernest B. Hoag and H. Kahn. Chicago: E. H. Colegrove & Co. 1895 630
Materia Medica and Therapeutics. By John V. Shoemaker, A.M., M.D., LL.D. Philadelphia: The F. A. Davis Co. 630
Surgical Nursing. By Bertha M. Voswinkel. Philadelphia: P. Blakiston, Son & Co. 1895 630

EDITORIALS.

The Physical Effects of Pain 631
Traumatism as a Cause of Tubercular Meningitis 632
A Doubter on Sero-Therapy in Diphtheria. 633
Medical Notes 633
The Sixth International Congress of Otology. — The International Congress of Applied Chemistry. — Professor Riedel. — The Presbyterian Hospital, New York, in Debt.—Why not Renovate the Baths of Caracalla?—Nephrectomy for Injury.— The Bible as a Carrier of Infection.
New England.
Acute Infectious Diseases in Boston.—Typhoid Fever in Connecticut.
New York.
Society of Medical Jurisprudence. — Another Centenarian. — Diphtheria Prevalent.— Mortality.

CORRESPONDENCE.

Saccharum Album as an Oxytocic. *E. Chenery, M.D.*, Boston 635

MISCELLANY.

The Hair Turning from White to Black after Exposure to Severe Cold 634
Lions and Lavender Water 634
The Sun-Glass as a Surgical Instrument .. 635
A Family Tendency to Twins 635
Prehistoric Trephining in Russia 635
Army, Navy and Marine-Hospital Services, 636
Harvard Medical School, Evening Lectures 636

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

FOR PROFESSIONAL CARDS, MEDICAL SCHOOLS, ETC.,

See pages 16, 17, 18 and 19.

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See Advertisement of

VINOLIA SOAP,

PAGE 20.

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Original Articles.

THE IMPORTANCE OF FREQUENT OBSERVATIONS OF TEMPERATURE IN THE DIAGNOSIS OF CHRONIC TUBERCULOSIS.[1]

BY WALTER CHANNING, M.D., BROOKLINE, MASS.

Mrs. ——, thirty-nine years of age, the mother of one child sixteen years of age, was admitted for treatment in July, 1892. Her mental trouble was mild melancholia, chronic in type, with a slight degree of dementia. There was no hereditary history. She was naturally bright and cheerful, and physically strong. No definite cause of the attack could be assigned, except exhaustion from overpressure in her daily life. It was probably some years in developing, but she did not break down until two and a half years ago, when she went abroad for treatment. For a time she was under the care of Charcot, but becoming violently insane, was sent to a private asylum under the direction of Professor Magnan.

Here she passed through a period of excitement, then became quiet and depressed, and finally had a period of comparative lucidity. She left the asylum for a while, but grew worse, and was obliged to return, since which time she has continued depressed.

About the first of June, 1892, when arrangements were being made for her to go to America, she developed what Professor Magnan called an attack of "enteritis," characterized by diarrhea and rise of temperature. In July she seemed strong enough to undertake the contemplated journey, and arrived toward the end of the month.

On admission she was very weak and feeble. Her features were pinched and haggard; she was much reduced in flesh; and she moved with great difficulty. Her temperature was normal, and her pulse 96. Physical examination revealed a small abdominal tumor, probably ovarian; otherwise it was negative. Her bowels were very loose during the voyage, though the number of daily operations rarely exceeded two, that at night being involuntary. Mentally she was very languid and listless, talking with difficulty, as if articulation were painful to her. Though her mind seemed dulled, she answered questions rationally, in as few words as possible. There were no apparent delusions, but loss of mental vigor and quick responsiveness, and an undue degree of depression and diminished power of perception of her condition and surroundings.

During the two weeks following her admission, the physical condition fluctuated considerably from day to day. Some days it would be better, with only one operation and a normal temperature. Then there would be two or more operations, the temperature rising two or three degrees. The evacuations were loose and watery, and rather greenish in color, with small, light-colored particles resembling milk-curd, mixed in. The urine was normal.

The combination of continued diarrhea, with a fluctuating temperature, tending to rise several degrees, led to the calling in of Dr. R. H. Fitz, of Boston, who carefully considered the possibility of dysentary. He thought there were no indications of ulceration, and was also of the opinion that the abdominal tumor probably had no influence on the bowel trouble.

During the next three weeks somewhat the same conditions prevailed, the temperature averaging one to two degrees above the normal, and sometimes reaching three and a half degrees. The dejections were usually watery, occasionally formed. Dr. Fitz visited her again, and advised some slight changes in treatment.

The following two weeks the bowels continued much the same, but the temperature showed even greater variations, several times rising to 102°. The greatest rise invariably occurred at night. It was noticed at this time, that she had no consciousness of the elevation of temperature. She might be duller than usual and inclined to sleep more, but she took her food well, and refused to be sponged, or have cold compresses applied to her head. This obliviousness was undoubtedly, in part, due to the condition of mental dulness which had settled upon her, making her less alive to physical sensations; yet, on the other hand, she grew intellectually brighter as time went on, was emotionally sensitive, and in her perceptions of people and her environment, unusually quick and keen.

In order to get further light on the nature of the abdominal tumor, Dr. A. T. Cabot, of Boston, was requested to see the patient in consultation. He thought the tumor inflammatory or malignant, and advised a bimanual examination under ether for the purpose of making a more exact diagnosis.

A few days later the suggestion of Dr. Cabot was carried out, the patient being given chloroform, and examined in conjunction with Dr. Wm. T. Bull of New York. The report they made was as follows:

> "We found a mass about the size of a lemon, or slightly larger, lying on the left of the uterus, and on a plane posterior to it, so that it seemed as if this mass lay behind the left broad ligament. It was slightly irregular in shape, and not entirely even in consistency — that is, some parts were firmer than others. With a finger in the rectum one of the little prominences disappeared with a sense of giving way, which suggested the rupture of a small cyst on the surface of the mass. This mass was adherent, could not be moved considerably up or down, and gave the impression of being an enlargement of the ovary of that side, which was very adherent to the parts about and which on parts of its surface had little cysts projecting. No secondary nodules could be felt anywhere through the pelvis. The diagnosis was either an enlarged and cystic ovary, which was held firmly in place by inflammatory adhesions, or an ovary of the same character, but containing portions of a malignant nature, which had led to adhesions of surrounding parts. The first condition is naturally the most common, but there was doubt in this case, whether it might not be the latter, because of the affection of the bowels which she had had for some time, and also because of the serious loss of flesh and strength which had accompanied it, and which seemed to be out of proportion to any other condition which could be made out anywhere."

In connection with the examination the probable benefit to arise from an operation was considered. It was decided this would be very small, to say the least, both on account of the patient's physical and mental condition. She hardly seemed strong enough physically to undergo an operation, and the quiescent mental state might be changed into one of active disease.

During the next six weeks there was no real gain in the patient's condition. The bowels were at times better, at one time the dejections being formed and normal in appearance. Again, there would be several discharges of a loose and watery character, in the twenty-four hours. The temperature showed a marked tendency toward periodicity, remaining about the same for a few days then gradually rising at night, being normal in the morning, until it reached its maximum, which at this particular time was 104°. The period of rise until the highest point was reached, might be three days; the fall was more rapid, sometimes following immediately, which might have been partly explained by the administration of phenacetin. The attacks, or periods of rise would usually be ushered in by a slight chill, or accession of the prevailing malaise. In the hot stage, the patient's cheeks would be flushed, the skin dry, the eyes congested, and a typical picture of a fever attack was presented, but if she were asked how she felt, she would only say a little uncomfortable, or her head ached, or she wanted to be quiet. There was, of course, a sweating stage, but not very profuse perspiration. The subsidence of the rise was naturally followed by a temporary increase of weakness.

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[1] Read before the Boston Society for Medical Improvement, October 21, 1895.

Dr. Fitz was again requested to see the patient, the persistent elevation of temperature, without a satisfactory explanation, occasioning some uneasiness. He thought the temperature very curious, suggesting the probable existence of pus in some way connected with the intestines. He also thought the possibility of malaria was to be considered in connection with the periodical rises of temperature, and advised the administration of quinine in increasing doses, until the limit of tolerance was reached. His physical examination was recorded at the time as follows:

> "Dulness at the bottom of right chest below inferior angle of scapula, and extending up to the right nipple. Breathing and voice sounds less strong on the right side. No râles behind, in front a little dry crackling, probably edema. Liver dulness not distinguishable. Lower border not below usual level. Tenderness lower side hip twelfth rib on the right side. No local tenderness or induration. Tenderness behind on right side in tenth and eleventh intercostal spaces. Heart and lungs normal. Spleen slightly enlarged. No tenderness. Abscess of the liver to be watched for."

For the following two months the patient was given quinine in large doses, but notwithstanding the fluctuations in the temperature continued. Many days the range would be from 99° in the morning to 100° at night, but a number of times it reached 102°, and on one occasion 104°. Before this last rise it had been normal for several days, then a slight elevation was noted and it rose gradually. Once when it was 102° and the patient's face was flushed, she said she was very comfortable, and evidently had no idea that she was hotter than usual. When it reached 104° she said she felt very sick, but had no pain. She seemed dazed and stupid and wanted to sleep. Her bowels were acting fairly well, the dejections sometimes being formed, and not many a day. Her mind was rather more active, so that she read many books of a light character and talked in a pleasant, bright way.

Dr. Fitz saw her again at this time and thought that as the temperature continued to rise in spite of the long course of treatment with quinine, the fever was probably not of malarial origin. He suspected from the persistent elevation of temperature that a chronic tubercular condition existed outside the lungs, probably in the Fallopian tubes, and he thought the tumors were the diseased tubes. He also thought that the distention of the bowels (which had become at that time more marked and attended with some discomfort) might possibly be the beginning of tubercular peritonitis or a part of the intestinal disturbance.

Six months after admission, or the last of January, 1893, the patient had been having some comparatively comfortable weeks. The temperature had not risen above 101°, and rarely had been so high. Dejections averaged not more than one a day and were of fairly good color and consistency. Dr. Fitz at this time found the abdomen softer and only sensitive over the dull, circumscribed and resistant mass in the right hypogastric or iliac region. Mentally the patient was quite bright, and only complained of the difficulty of eating and of slight nausea.

For the few following months the temperature was irregular and occasionally high, but there were weeks when it did not get higher than 100°, this being about as low as it went at night. Stools were more frequent (perhaps three in two days), soft solid in form, brown in color and contained no mucus. There was some difficulty in taking food, occasional attacks of indigestion, pain from gas in the bowels; but otherwise nothing of moment, until the temperature in May reached on one occasion 103.8°, and on another 104.8°. On the first of these extreme elevations, there was a slight chill; but the patient did not notice it much, and took her food as usual. On the second she said she felt "sick all over," but took a fair breakfast and dinner. The next day she was as well as usual.

In June she seemed stronger. She was able to lie on the sofa each day, took a considerable amount of food, and appeared to be gaining in strength and perhaps a little in flesh, having already become somewhat emaciated. She was seen at this time by Dr. Fitz, who found the abdomen moderately distended and tympanitic, but no tenderness or resistance except in the left iliac region where he had found it before, and in the right iliac region, though less sharply defined. He thought the tumor was now about the size of the fist. Asked his opinion in reference to the advisability of an operation, he said he did not then think it desirable, but if the mental and physical improvement continued, she might be examined at a later period under ether, with an operation in view, if everything were favorable.

Two months later Dr. Cabot again examined the patient. He noticed greater pallor of the face than when he had seen her before, also puffiness of the face and club-ended fingers. On examining the abdomen externally, he found low in the left side a little sense of resistance, the bowels being distended and resonant over the anterior portion, but dull in the flank, especially on the left side, the right being resonant. Fluid which he thought to be present shifted from one side to the other when the patient was turned over. He thought the symptoms pointed to tuberculosis more than the year before. He would advise an operation if he were sure there was no ulceration of the bowels.

Dr. Fitz having seen the patient three days before Dr. Cabot's visit, the latter communicated with him to get his opinion as to the advisability of an operation, and wrote the following letter:

> "I have just seen Dr. Fitz. He is somewhat inclined to think that the dulness in the flank may be caused by fluid contained in coils of intestine and not in the free abdominal cavity. He does not feel inclined to any operative interference at present, but thinks that if a general ascites developed, it might be wise.

"I have been thinking the matter over, and my feeling about it is this: that if the evidence distinctly points to tuberculosis as the probable diagnosis and the fluid which has accumulated there in the abdomen (if I am right in thinking it free fluid) were not to be absorbed, then an operation to thoroughly drain out that fluid and wipe the abdominal cavity dry would be a wise one.

"Just how it would be best to treat the mass in the left side, I am not sure. It seems to me that if it were a matted tube, with the intestines adherent about it and in a tuberculous condition, it would be best not to meddle with it, but content ourselves with drawing off the fluid, and leave this mass to be re-absorbed if possible."

After considering the subject a little more fully, Dr. Cabot goes on to say:

"I write all this to you because I suppose the duration and severity of the operation would have considerable influence in deciding you whether, in her mental condition, any operative measures were wise. I should think, with Dr. Fitz, that with a certain amount of doubt as to the character of this fluid, and also while it is still doubtful whether it may not be of itself re-absorbed, that it would be wise to wait and watch the course of events."

Dr. Cabot enclosed a copy of a letter from Dr. Wm. T. Bull, with whom he had corresponded in regard to the case. Dr. Bull thought the extreme exacerbations of temperature pointed to suppuration in the exudation, or tumor. He agreed with Dr. Cabot that the removal of any solid mass from the abdomen would be a very risky procedure. He had known good results to follow simple exploratory incision and evacuation of the fluid in tuberculous peritonitis, where there were no pronounced, or advanced, or external solid masses present.

In the writer's opinion it was not a case where the mental condition would be improved by an operation. The patient had on the whole made a gain in this direction, and though her mind was not strong, she was fairly rational, and not depressed beyond a slight degree, and was quiet and usually composed. An operation might have entirely upset this condition and led to a more positive state of weakness and confusion, or even have developed an attack of acute excitement. Physically she was slowly growing weaker from the inroads of what appeared from the temperature and other symptoms to be a somewhat widespread inflammatory or tuberculous process, and it was a serious question whether she would have the strength to rally from the shock and exhaustion of even a simple operation.

During the following three months the patient lost ground. Her strength failed a little; emaciation, which had been temporarily checked, had progressed. Food was less well assimilated, and taken in smaller amount. The bowels, however, though habitually loose, were in better condition; the dejections were sometimes formed, and not of bad color. The most striking symptom was still the temperature, which showed the same tendency to variations of several degrees between morning and evening, at irregular intervals of a few days, rising five or six degrees above the normal.

Dr. Fitz, who saw the patient at this time, regarded her condition as worse than at his last visit, several months earlier. The distention of the abdomen had increased, but it was still soft on palpation. In the left lumbar region extending downward from the floating ribs he found a movable mass the size of the fist, which he had not noticed at his last examination. He thought this was probably a tubercular mass which had been developed recently.

The history of the patient from this time to the day of her death, fourteen months later, was practically a repetition of that detailed above, the course of events being steadily downward. Mentally her mind became a little weakened, and she had times of crying and hysterical fright, when she thought she was losing her breath and would die. Generally, however, she expected to get well, and nothing in her condition or surroundings seemed to impress her with the seriousness of her illness. She took everything much like a child who is too undeveloped to fully appreciate the meaning of things.

Physically the emaciation became extreme, until she was wasted to a skeleton. The abdomen became considerably distended with gas in the intestines and there was an increase of fluid in the abdomen, with some apparent growth of the tumors. There was no great tenderness of abdomen on pressure, and the weight of the bed-clothes was not complained of. The number of dejections varied from one to several daily. During the last weeks they were of a yellowish color, and resembled in consistency the partially-cooked yolk of an egg. The temperature showed the same marked fluctuations, steadily and persistently, until within three weeks of the end, when it became subnormal.

The report of the autopsy, made by Dr. W. T. Councilman, was as follows:

The body small, slightly built, emaciated. Abdomen retracted. In the lower portion of the abdomen on left side just above pelvis, a tumor-like mass apparently filling up pelvis can be made out. Abdominal walls exceedingly thin. Subcutaneous fat all over body greatly atrophied. In the peritoneal cavity about one litre of slightly cloudy serum. The peritoneum thickened, and about the liver and spleen there are numerous adhesions. The pelvic cavity is entirely shut off from the general peritoneal cavity by adhesions connecting together an irregular, tumor-like mass. Two loops of small intestine are intimately adherent to this.

The diaphragm in usual position.

In both lungs well marked edema in the lower posterior portions.

Heart of ordinary size; valves normal.

Liver of ordinary size, firmly adherent to its surroundings and to the spleen. A considerable mass of adhesions in the portal of liver and around the portal vein which was thickened and dilated. On sections of liver, lobules visible, its tissue rather firmer than normal. The spleen enlarged to three times its normal size; everywhere so adherent that it could not be separately removed. Capsule thickened; on section rather firm. The splenic vein greatly dilated. The pancreas firm. Adrenal glands normal.

Kidneys rather small, pale, anemic; capsule slightly thickened. The mucous membrane of large intestine thickened and edematous; same condition less marked in small. Mucous membrane of stomach pale and anemic. The entire pelvis is filled up with a tumor-like mass, all parts of it firmly adherent. On the surface of this mass there are several small cysts with clear contents. The pelvic viscera were removed *in situ*. The uterus and tubes firmly united to the rectum, forming a roof over a cavity between the uterus and the rectum. This cavity is lined with a foul necrotic mass. No trace of ovaries could be found. There is an opening from the rectum directly into this cavity. The tubes are greatly enlarged. Their distal extremities form part of the wall of the cavity in the interior of the tubes. The walls are thickened, and contain a whitish, opaque mass.

The uterus is of normal size, the walls atrophic and anemic. Bladder normal. Mesenteric and post-mesenteric glands enlarged and soft.

Microscopic examination of the tissue comprising the wall of abscess in pelvis shows it to be principally made up of tubercles and tuberculous tissue. The tubes are almost entirely composed of tuberculous tissue, and miliary tubercles. Miliary tubercles also found in mesenteric and post-mesenteric glands and in liver.

Anatomical Diagnosis. — Tuberculosis of ovaries and tubes, with formation of tuberculous pelvic abscess with perforation into rectum. Tuberculosis of mesenteric glands and liver. Chronic peritonitis with adhesions. Chronic passive congestion and ascites, probably due to compression of vessels by peritoneal adhesions. Anemia, marasmus.

SUMMARY.

I have been led to report this case for the purpose of calling attention to the importance of making careful observations of temperature as an aid to diagnosis in obscure forms of disease with an absence of marked physical symptoms. While the temperature alone can rarely be regarded as strictly pathognomonic, I believe it to be more characteristic than is generally supposed. Especially in combined or chronic diseases I believe this to be the case, but usually observations have not been made for a sufficiently long period to establish a differentiated and definite type.

If we take the case under consideration, we get a good illustration of what I mean. Physical examination revealed only a small, abdominal tumor. There was no history of any disease, except that of "enteritis" as diagnosed by Magnan of Paris. The patient herself, from her enfeebled mental condition, was unable to give a satisfactory or helpful account of such subjective symptoms as might be expected to be present. Under these circumstances any clue was naturally followed which would tend to elucidate matters.

The presence of a tumor, probably ovarian, called attention to the abdomen, and led to the examination under chloroform, which determined the site of the tumor and its probable size and connections, but not its character. This could, of course, have been ascertained by an operation, which was not deemed advisable. It was probably malignant, tuberculous, or innocent, with formation of pus, but which could not be positively decided.

The most striking datum, from the start, was the persistent continuance of an elevation of the temperature, not day after day reaching regularly a certain maximum height, but while usually at night considerably above normal, tending at short and irregular intervals to rise much higher.

Malaria, as a possibility, was suggested by this periodical rise, and the onset of the attacks, which began with a slight chill, passing into a hot, then a sweating stage also very slight, and out of all proportion to the height of the temperature. A prolonged course of quinine treatment produced no modification in the character of the attacks, or the elevation of temperature, and the existence of malaria was therefore of necessity excluded.

Abscess of the liver was also considered as a possible cause of the symptoms, but there was no enlargement of the liver; no fluctuating tumors of its surface; no jaundice; no pain referable to the liver; no gastric disturbance at the beginning of the illness. The temperature in abscess of the liver may be high and intermittent, but the periods would be nearer together and more definite, and the febrile disturbance more decided, and directly debilitating. In the case under discussion, even very considerable rises in temperature would have passed unnoticed, had the thermometer not been regularly used.

Cancer was also eliminated as the explanation of the symptoms by the absence of pain, jaundice, hemorrhage, the character of the temperature, and negative physical evidence. It was only in the beginning, at the time when the bimanual examination was made under chloroform, that its existence was considered possible.

Chronic tuberculosis, by exclusion, was then the only diagnosis which could be adopted to satisfactorily account for the symptoms, and as has been seen, the autopsy proved its correctness.

The temperature was recorded for a period of nearly two years and three months, being taken in the mouth and always by a physician. The total number of observations amounted to 1,582; 409 times there was a rise to between 100° and 102°; 87 times there was a rise to between 102° and 105°; 32 of these times 102° was the point reached; twice 105° and several times 104.4° was reached. The pulse usually followed in increase of frequency the elevations of temperature.

The greater of the rises in the temperature followed no rule as to regularity explainable by outward manifestations. Sometimes there would be only an interval of three days; then again of a week; sometimes of two weeks, occasionally of three, but rarely so long an interval elapsed. When there was no excessive rise for some time, the daily fluctuation would be greater.

The maximum elevation would be reached by the second or third day, each day rising a little. Or there might be a fall the second, with a very material rise on the third; usually, however, the rise was a continuous one in the way described. The greatest rise, with very few exceptions, occurred at night. The next morning would mark a fall even where the febrile process continued, in which case the evening temperature would be higher than the night before. The subsidence was, like the rise, usually continuous with a marked decrease each night.

The slight degree of noticeable constitutional disturbance resulting from even the greatest elevations of temperature was several times alluded to in the report. This was partly due no doubt to the mental apathy of the patient, which made her less consciously impressionable to physical processes, but must also be regarded as characteristic of tuberculosis. In this disease, the fatuity of the patient under the most hopeless conditions is a phenomenon we are familiar with. It is hardly possible to believe that there is any other disease where such a high temperature could continue for so long a period, as the underlying conditions would be serious enough to lead to a fatal termination much earlier.

It would be interesting if a temperature curve could be plotted which might be regarded as characteristic, if not pathognomic, of chronic tuberculosis. This can only be done by careful observations in a considerable number of cases. In the case under discussion the following points are brought out, which are, I believe, of significance from a diagnostic point of view, and of especial value in obscure cases, and, as far as they go, throw light on the temperature curve:

(1) An average considerably above normal.

(2) An almost invariable rise at night.

(3) Periodicity of a maximum elevation of several degrees, occurring at irregular intervals of a few days.

(4) Gradual ascent to the maximum for two or three days, with a decline sometimes gradual, sometimes sudden; the ascent at night, the decline in the morning.

(5) Protracted continuance of a high temperature for months or years.

(6) Less constitutional reaction from the periodical rises of several degrees, than would be expected.

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IMMUNITY AND CURE.[1]

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In the few years that we have known ourselves to be surrounded on all sides by many forms of microbes, some of which cause definite and specific diseases, there have arisen from time to time more or less successful efforts to explain, not only the action of these microbes, but also the immunity that some species and individuals evidently possess against this action. The success of the so-called antitoxic serum in diphtheria in the last two years has directed public thought in this direction more strongly than ever, and created a widespread interest in this question of immunity and cure. Empirically the various antitoxic serums have been found to confer a relative immunity if administered before infection, and to promote recovery if administered not too long after infection. Most of the theories that have been propounded to explain these empirical facts have been based on foundations not deeply enough laid or on a too narrow survey of the whole field. It is my purpose to-day to attempt a general survey of the whole field, and see whether, by the labors of many workers in diverse fields, enough facts have been accumulated to permit of the construction of a theory of immunity which shall explain all these facts; if too few facts have been determined, at least such a survey will show the direction that new investigations must take in order to give us the needed data.

Before the subject of immunity can be taken up, it is essential to know something of infection; for it is obvious that before we can direct intelligent efforts against an enemy, we must know the character of that enemy. Armor is no protection against a poison, nor is antitoxic serum of any avail against a bullet. To the science of bacteriology we must turn in the first place for the information we seek — a science that in its thirty years of existence has made wonderful and rapid growth. A brief review of the facts it has established which are germane to our present purpose will be in order. Chemistry early comes to the aid of bacteriology, and later becomes so intimately associated with it that a separation of the two is hardly possible. The following are the facts that these two sciences have established beyond a doubt:

(1) Many diseases, both local and general, in man and the higher animals, are due to the presence in the body of microbes.

(2) In some instances, as in pneumonia, typhoid fever, cholera, tetanus, etc., the same microbe causes always, so far as is yet known, the same disease, with clinical symptoms the same, except for varying degrees of severity.

(3) In other instances, the same microbe may cause widely different clinical pictures; as, for example, the tubercle bacillus may cause the glandular enlargements formerly known as "strumous," or pulmonary phthisis, or caries of the spine, or lupus, or general miliary tuberculosis, etc. (8); or the streptococcus pyogenes aureus may cause simple abscess, puerperal fever, carbuncle, erysipelas, or septicemia and pyemia (1, p. 241).

(4) These microbes cause disease only if they are within the body. They are harmless so long as they remain outside of the healthy, unbroken integuments of the body, whether of the outer surface or of the digestive or respiratory tracts.

(5) A certain number of microbes is necessary to produce disease, the number in any one case varying according to the different species of microbe, and to different individuals of the same species; also to the different species and individuals of the animal infected (1, pp. 11, 12).

(6) Once within the body of the host, or in culture media in the laboratory, the microbes, under favorable conditions, increase rapidly in numbers, requiring food for this growth and giving rise to chemical substances which are thought to be poisonous to themselves as well as to the host. After a time the microbes die in large numbers both in the cultures and in the tissues (3).

(7) These chemical substances, called variously ptomaïnes, leucomaïnes, toxins, or tox-albumins, contain bodies which vary in chemical complexity from alkaloids and such substances as leucin, tyrosin and other bodies which have been extracted from the animal tissues (1, pp. 90, 254), and whose constitution is definitely known, to proteid bodies which have been described, some as globulins (30), some as nucleo-albumins (1, p. 113), some as albumoses, etc. (1, pp. 90. 113, 177, etc.; 29), and some as peptones (1, 5), Nearly all are poisonous to the human organism.

(8) Different cultures of the same species of microbe may differ widely in virulence (1, pp. 36–40), some being almost innocuous, some rapidly fatal when injected in equal amount into animals of equal size, weight and susceptibility so far as can be determined (2, p. 74).

(9) Culture media, whether artificial or natural, temperature, chemical substances, and other conditions may modify the virulence of these microbes, to increase or lessen it (1, pp. 36–40, 241, etc.; 2, p. 21).

(10) Injections into the animal body of sufficient amounts of cultures in which the microbes have been killed produce the symptoms of the disease that would be caused by the injections of the living microbes (1, p. 40).

(11) Similar injections of sufficient amounts of filtered, and therefore germ-free, cultures produce similar results (1, p. 40).

(12) Similar injections of sufficient amounts of the tox-albumins isolated from the cultures of some microbes also produce similar results (1, pp. 112, 113, etc.; 33).

From these facts it is fair to draw the following conclusions as to the possible ways in which the microbe may work harm to its host: it may act, first, mechanically, by increasing in numbers so rapidly as to plug the capillaries of the body or some of its more vital organs (the earlier inoculation experiments with anthrax seemed to support this view); second, physiologically, by withdrawing from the host nutrient materials necessary for its own growth and nutrition (13, p. 22), a view which receives little acceptance now; and third, chemically, by means of poisons, mostly if not exclusively proteid, which are (*a*) the metabolic products of the microbes, (*b*) substances derived from the dead bodies of the microbes, (*c*) substances produced by the action of the microbes on the tissues with which they come in contact, or (*d*) any combination of any or all of these.

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[1] Read before the Middlesex South District Medical Society, October 9, 1895.

Of these three modes of action, the mechanical is not in itself alone sufficient; it occurs only in cases where the number of microbes is so great that all the resistive forces of the host are at once overcome, and plays but a very subordinate part; the physiological is theoretical rather than established by observation, and is not supported by experimental evidence; the chemical is the chief, and is the only one that need be seriously considered. As will be seen later, the substances derived from the dead bodies of the microbes probably play the most important rôle (3), the other substances found in the cultures only serving to add a few details to the clinical picture the main lines of which are drawn by this cell-substance.

We have just seen what are the characters of the enemy against which the host must protect itself. Let us now examine the latter's armamentarium to find what means it has for resisting the enemy in whatever character it appears. The host acts against the invader and for its own protection, as the microbe acts against the organism, mechanically, physiologically and chemically. These three modes of action are variously combined with one another and rarely occur alone.

First, with regard to the mechanical action: The microbe, as we have seen, is powerless unless it can gain entrance into the tissues of the host. So long as the skin, the mucous membranes, and the linings of all cavities connecting with the outer air are intact, the microbe cannot gain entrance (2). Mechanical abrasions of these surfaces, or chemical alterations in their cells, especially of the mucous membranes, may allow the entrance of the microbe or its poisons (2). We may fairly assume the existence of chemical alterations in these cells, though we do not know what they are nor how they originate; for vital processes are largely chemical processes of a very highly complex character, and we know from pathology that marked chemical as well as structural changes take place in the cells in advanced stages of disease. If the microbe makes an entrance into the body through the skin, a proliferation of connective-tissue cells, of leucocytes which the blood circulation has brought to the spot, and, according to some authors, of the so-called slumber-cells takes place, whereby a wall of cells is built around the invading microbe — round-cell infiltration — to prevent its further advance (2). If this process does not take place rapidly enough, or if the microbe is virulent enough to overcome this barrier, and also at once when the microbe enters through the mucous membranes, it finds itself in the lymph spaces, whence it is carried through the lymph vessels to the lymph glands (2).

Anatomical structure, including blood-supply, lymph-supply and the presence or absence of much connective tissue, in connection with physiological activity, is a very important factor in the mechanical obstruction to the spread of the microbe and its poisons. In the lymph glands and spleen the lymphatic vessels are open-mouthed, and distribute the lymph and its contents throughout the gland, thus scattering whatever microbes it may contain throughout a tissue whose office it is *par excellence* to manufacture leucocytes which we shall see later have special protective functions against microbes and their products. The same proliferation of cells and walling-in process that occurs in the skin is attempted here as well. Also the blood-vessels open freely into these organs, bringing germicides to aid the cells.

If the microbes finally pass this barrier, they reach the general blood circulation and are distributed to the various organs throughout the body. The organs having terminal arteries and a relatively small amount of connective-tissue cells are much more liable to contain microbes after death from infection than are those in which there is a free collateral circulation and abundance of connective tissue (2). The walls of the serous cavities and of the blood-vessels, including the capillaries, besides acting like the unbroken skin, have, like the leucocytes of the blood and lymph, the power of enveloping and destroying microbes by the process known as phagocytosis (2, 11, 12).

With regard to the physiological action: The rapid increase in the number of white corpuscles (leucocytosis), and of the connective tissue cells is due to the physiological process of cell-division. Glandular enlargement is the result of such an increase in the number of the gland cells. This process is promoted by substances — nucleins and nucleo-albumins — which are derived from destroyed cells, whether these be of microbic or animal origin (4). The destruction of leucocytes especially gives rise to this substance, for they are richer in it than any other cells in the body (17, 18). The ingestion of microbes by the leucocytes or phagocytes is a physiological as well as a mechanical activity of the organism.

With regard to the chemical elements of the armamentarium, not a great deal that is exact is known, though in recent years much work has been done in this field and a good beginning has been made. The following is a brief summary of what has been done:

(1) The blood and blood-serum contain in solution substances which are germicidal (6, 7, 24, 25).

(2) These substances are thought variously to be globulin (1, p. 33), alexines (an albuminous body) (7, 9), alkali-serum-albumin (1, pp. 25, 26), nucleo-albumin, and nuclein (3; 6; 1, p. 29).

(3) The origin of these bodies in the blood-serum is chiefly from certain cells, especially the leucocytes of the blood and lymph (6, 17, 24). Hankin thinks that "defensive proteids," as he calls them, or "alexines" as Buchner calls them, are derived from the eosinophile granules of the eosinophile leucocytes which he therefore proposes to call "alexocytes" (24). Vaughan and Kossel have shown that the nucleins are derived from the nuclei of destroyed cells, whatever their nature, whether leucocytic, glandular or bacterial, but especially the former (17, 4). The exhaustive studies of Lilienfeld into the chemistry of the leucocytes are confirmatory of these observations (18, 19).

(4) The nucleins from different sources have different actions and effects, but all are strongly bactericidal (3). So far as their physiological action has been studied, they are found, among other things, to stimulate the new formation of leucocytes (16, 17, 4). Chemically they are proteids; they unite very readily

with albuminous bodies, especially with albumoses and peptones, to form nucleo-albumin; they are easily separated into neucleinic acid and albumin, and nucleinic acid readily unites with albumin again to form nuclein (17, 18, 4).

(5) During the process of cell-division of the leucocytes, nucleinic acid is set free; during the physiological rest of these cells it is in combination with the albumins of the cell. Nucleinic acid is also a germicide (17).

(6) The alexines, globulins, and serum-albumins have not been studied with sufficient accuracy and detail to enable us to know much of their chemical or physiological action or of their origin.

(7) The different organs and parts of the body have different chemical constitution, as their products and the glandular extracts give evidence; and they have also different resistive and destructive powers with regard to microbes, due partly to anatomical and histological structure, also probably to chemical differences. Hence occur what are known as "places of less resistance" (2).

Thus by destruction of leucocytes a germicide "more powerful than corrosive sublimate" (3) is set free to circulate in the blood, and to stimulate leucocytosis. It is evident from these observations how extremely important the leucocytes are for the protection of the animal against the microbe.

Marmorek (2) says with truth that "every [infectious] disease is the expression of a ratio (Verhältniss) between an infecting parasite and an infected host," and the recovery or death of the latter depends on the relative strength of the two factors. Having just seen what these two factors are, let us next examine some of the conditions which affect the strength of the one or the other.

On the part of the microbe these conditions are, first, numbers; second, differences in virulence; and third, the presence of other pathogenic or non-pathogenic microbes.

(1) As has been said before, it requires a certain number of microbes to cause infection,— except under the rare condition of very great virulence on the part of the germ and very great susceptibility on the part of the host, a single microbe cannot do it (1, pp. 102, 12, etc.). The numbers required depend partly on their virulence. Of a very virulent culture a smaller number of microbes would produce the disease than would be necessary if a milder culture were used.

(2) Different cultures of the same microbe may vary widely in virulence whether tested by inoculation of the germs themselves or of their products. The virulence can be artificially modified by means of heat or cold, chemical substances, culture media, etc. In general it may be said that conditions favorable for the rapid growth and development of the microbe increases its virulence, unfavorable conditions diminish it. Differences of this kind probably account largely for differences in severity of different epidemics.

(3) The influence of mixed infections has but recently been studied, but there is positive evidence to show that a microbe which by itself alone would be quickly destroyed by the host, is given an opportunity to develop by the presence of another kind of microbe. Thus streptococcus spores will not develop in the human body; but if staphylococcus pyogenes aureus be injected at the same time the streptococcus will develop and cause the prevailing disease (1, p. 7). On the other hand, the presence of some bacteria prevent the poisoning of the host by another kind. Thus bacillus pyocyaneus protects the host against bacillus X, the yellow fever bacillus (1, p. 62).

On the part of the host some of the conditions affecting its resisting powers are the following: 1. Race; swine are not susceptible to glanders, horses are (1, p. 5). 2. Species; Algerian sheep are not susceptible to anthrax, while common sheep are (1, p. 5). 3. Age; children are much more susceptible to scarlet fever, whooping-cough, etc., than adults (1, p. 4). 4. Fatigue; the rat, immune to anthrax, on being made to work all day, succumbs to infection (1, p. 9). 5. Starvation (1, p. 9). 6. Loss of blood (1, p. 9). 7. Infection with other microbes not necessarily pathogenic (1, pp. 7, 62, etc.). 8. Confinement in a vitiated atmosphere (1, p. 8). 9. Extreme cold (1, p. 9). 10. The exhibition of some drugs, as curare, chloral, alcohol (1, p. 10). 11. Place of infection; a dog injected with pneumococci had pneumonia only when they were injected into the lung tissue (1, pp. 217, 218). 12. Previous infection with the same microbe. 13. In general, conditions which affect the body metabolism. 14. Individual peculiarities whose source is unknown; of two white mice born of the same mother, of the same litter, fed on the same food, kept in the same cage, reared under the same conditions so far as could be determined, inoculated at the same time with equal amounts of the same filtered streptococcus culture, one fell ill and died in a few hours, the other had a longer illness with final recovery (2, p. 74).

When it is remembered that the animal body is made up of chemical compounds of almost infinite variety and complexity, that these compounds differ in the different races (the blood of the white rat is more alkaline than that of most other animals), in different species, in different individuals of the same species, and at different ages and under different general conditions of health in the same individual (auto-intoxication, 20); when these things are remembered, it is not surprising that exposure to infection by microbes, which vary, as has been shown, not only in themselves but in their products, should result differently in different individuals, some succumbing entirely, others recovering, others still, though equally or more exposed, entirely unharmed.

Up to this point we have reviewed only the means possessed by every animal for self-protection against the microbe. They are natural means, not subject directly to the volition of the animal, and confer a natural immunity.

But man with his greater intelligence has sought to protect himself by art as well as by nature: observing that some species and individuals were unaffected by exposure to what would mean serious illness or death to himself, he has tried to produce in himself the conditions which he has thought gave them their immunity. It is only because his efforts have been directed at once to finding these conditions of immunity and the means of cure, instead of first determining the nature of the infection against which he wishes to be immune and the processes by which it acts, that greater understanding of the problem has not been reached before now. It was a wonderfully keen observation and a very shrewd conclusion, rather than a knowledge of the cause of small-pox, that led Jenner in 1768 to the practice of vaccination. As late as 1891 our knowledge of infection and the mode in which the animal opposes it had not been advanced far enough to prevent Koch's tuberculin from making a miserable failure as a *cure* for tuberculosis.

The earliest attempt to secure artificial immunity, based on a knowledge of the process of infection, was made by Lister in 1867, when he advocated the use of germicides in surgical operations (28). It was a shot aimed directly at the life of the microbe, the cause of infection, under the supposition that the dead microbe can do no harm, a supposition that will be seen later, however, to be erroneous. Since that time substances and methods have been sought for which should kill the microbe, either before or after its entrance into the tissues, without at the same time injuring the animal. The whole modern system of asepsis and antisepsis with all its paraphernalia of disinfecting agents and sterilizing apparatus has arisen as the natural development of this idea of killing the microbe; and it has reached an advancement well-nigh perfection in some directions.

The other advances that have been made have had their starting-point in observations of conditions that seem to determine immunity or cure, rather than in a knowledge of the processes themselves by which these results are brought about. Thus, almost from time immemorial it has been known that one attack of some of the infectious diseases confers immunity for a longer or shorter time from a subsequent attack. With this end in view experiments on animals were made with considerable success (1, p. 36).

At first it was thought necessary to inoculate with the living microbe, and cultures of attenuated virulence were made for the purpose. As soon as it was known that the microbe produced its effects by its chemical products and that these were to be found in the cultures after the bacteria had been killed or filtered out, sterilized cultures were used instead of the living microbe for inoculation. These cultures contain the so-called toxins or tox-albumins. Experiments with small doses of these toxins, progressively increased until very large ones were administered, continued to give success in conferring immunity upon previously susceptible animals. Still the conditions which determined immunity, not the causes and processes which produced it, were being studied; which rendered it possible to draw the fallacious inference that if the toxin conferred immunity before infection by the microbe it should confer immunity after infection. Hence the dismal failure of tuberculin. Success by this method was obtained only when a short time (a few hours) elapsed between injection of the toxin and inoculation with the microbe. It is manifestly absurd to expect a cure from the injection of more poison into a body already overcharged with the same poison (4).

The next advance, made hardly more than five years ago (1, p. 46), was based on an inference as to processes rather than upon knowledge of them. It was inferred that if animals could be made immune to bacterial poisons it must be because the blood-serum contained substances in solution that neutralized or destroyed these poisons. And the injection of such serum, called antitoxic for obvious reasons, was found not only to confer a temporary immunity before infection, but to promote recovery after infection. Hence arose the so-called antitoxic serum therapy of to-day. The investigations of many bacteriologists are directed to the elaboration of such protective serums for the different infectious diseases.

Let us examine more closely how these immunizing or antitoxic serums as they are called are prepared, and, as far as possible what they really are and how they produce their effects. To begin with, a pure culture of the microbe is obtained and allowed to grow and develop in a suitable culture medium. At the end of a stated time, varying from a few days to a few weeks, or even months, this culture is sterilized by heat or by filtering, the latter being preferable as it is less likely to alter the highly-complex chemical substances of the culture. The filtrate contains the toxin or tox-albumin, whose strength is usually then determined by its lethal effects on small animals. This having been determined, a dose that is sure not to be fatal is injected into the animal to be immunized. There follows some general or local reaction if the dose has been fairly large for that animal. After this reaction has subsided (in a few hours or days, as the case may be), a larger dose is injected. This process is continued until the animal can take with impunity many times the dose that originally would have been rapidly fatal. It is the serum from the blood of this animal that is the antitoxic serum for that particular microbe (26). That such a serum acts specifically has been shown experimentally many times (32). It is found that the serum of an animal that has never been immunized, yet has a marked natural immunity (as of the dog to anthrax), does not confer special immunity upon a susceptible animal. If, however, a naturally immune animal is treated with successively increasing doses of toxin, its serum is rendered protective to a susceptible animal. Furthermore, a serum which gives protection against the disease against which the animal has been immunized, does not necessarily give protection against any other infection.

What is the toxin and how does it act? Most investigators agree that it is a proteid. Vaughan makes the general statement that it is a fact that the germ-substance, either in solution or in the cell-wall of the microbe is essential to produce marked immunizing effects (3), a statement which receives full confirmation for one infectious disease in Goodale's recently published account of the preparation of diphtheria antitoxin (26). He says expressly that, though the bacilli themselves are virulent, toxin is not present in the culture until there is deposited a sediment which, on microscopic examination, is seen to consist of the disintegrated bodies of dead diphtheria bacilli; that is, until the germ-substance has become dissolved in the culture medium. (See also 29). Accidental infection, vaccination as practised by Jenner, inoculation with pure cultures, inoculation with cultures sterilized by heat or by antiseptics and injection of filtered cultures, all introduce into the tissues the cell-substance of of the germs, either within the cell-wall or in solution. (The dead microbe is thus seen to be not so harmless as at first supposed.) Vaughan believes this germ-substance to be a nuclein, — a belief that is supported rather than opposed by the fact that of the bacterial toxins thus far studied nearly every one is found to be an albumin, often of the nature of a peptone or albumose; these being the forms of albuminous bodies that unite most readily with nuclein to form nucleo-albumin, the chief constituent of the nucleus. The toxin then is probably a nuclein of bacterial origin.

How does it act? We do not know. Like many other substances, in small amounts it stimulates certain physiological processes such as cell-division; in large doses it paralyzes these and also produces directly or indirectly, general effects on the circulation, respiration, digestion and general metabolic processes. Perhaps the nucleinic acid of the toxin is the stimulant, while the albuminous bodies united with it, especially if they are peptones, may be the poisons. This, however, is pure conjecture.

What is the so-called antitoxin, or immunizing and curative substance, and how does it act? Again, we do not know certainly. The phenomena of lucocytosis, with the accompanying formation of nucleinic acid which seizes upon albuminous bodies to form nuclein, and the formation of nuclein through the destruction of leucocytes and other cells point strongly to the nucleins of cellular origin (in contra-distinction to those of bacterial origin) as the antitoxic and curative substance. Whether the two effects of protection and cure are accomplished by the one substance is not known; Vaughan believes they are (3).

How do these body nucleins act in these capacities? It is known that they are strongly bactericidal, thus preventing the increase in numbers of the microbes. Though the latter are killed and thus give rise to toxin, it is probable that the nuclein and nucleinic acid of the body unite with this toxin as it is formed and render it inert. Or it may be that the two nucleins of different origin unite with each other to form isomeric compounds and thus assimilate each other, the stronger assimilating the weaker (3). Perhaps the body nucleins lay hold of the albuminous element in the microbial nucleins, making a more harmless compound. The *specific* action of the serum perhaps depends upon the failure of the body to eliminate the bacterial poison until after the lapse of considerable time (as it fails to eliminate lead, for instance), and this remnant of the poison gives the character to the body nuclein, or perhaps, during its presence in the body the bacterial nuclein so alters the metabolic processes of the cells that the latter produce a nuclein of a special character, and only gradually (or not at all) return to their original metabolism. (A possibly analogous alteration in cellular metabolism occurs in diabetes mellitus.) Let it not be forgotten that these explanations of the action of the so-called antitoxin are conjectural. Bouchard says that the serums only aid the *vis medicatrix naturæ*, and have no real antitoxic action in the sense of neutralizing the toxin as an acid does an alkali (21).

From all these considerations it seems probable that the acquired tolerance of the animal for bacterial toxins is dependent rather upon the capacity of the body cells, especially those of the blood-forming organs, to respond to the stimulus of the toxin by the formation of germicide and antitoxin, that is, nuclein, than upon the continued presence in the blood of these germicides and antitoxins. In the serum of recently immunized animals, however, these substances are probably still to be found, for the cells do not at once lose their specially induced activity. This capacity of the cells to respond as above stated is the property of all cells to some degree. It is temporarily increased by the action of nuclein, more permanently so by that of toxin. It is usually gradually lost under the absence of the stimulation which calls it forth.

The culture media from which the toxins are obtained contain other substances as well, some of which were mentioned earlier in the paper. Besides these there are others which are not well known; thus, Centanni has isolated a substance which he describes by negatives — it is not albuminoid, not a nuclein, not an enzyme, not a ptomaïne — which is found in the products of all bacteria, pathogenic and non-pathogenic alike, and which causes merely a rise of temperature (23); Klebs is said to have found in tuberculin three substances, of which one is a cardiac depressant, another causes fever and malaise, while the third is a germicide towards tubercle bacilli (27). These must affect to some degree the animal into which they are injected. The antitoxic serum must also contain other substances than the antitoxin, and it is doubtless to some of these that are due the unpleasant effects, such as erythemata and joint pains, which sometimes follow their use.

Can the phenomena of infection and immunity now be explained? An explanation of what occurs in vaccination will apply to any natural or acquired infection that is caused by the introduction of living germs, the only difference being that here the time and place of infection are definitely known.

A culture of small-pox microbes, attenuated in virulence by cultivation in the calf, is introduced into the tissues of the body. If for any reason the culture was sterile, or if it contained too few germs, or if it were not properly introduced, or if the individual had, for some of the reasons mentioned earlier in the paper, a natural immunity, little or no reaction occurs; the germs are killed *in loco* and their poisons are destroyed, or absorbed and eliminated — the vaccination "did not take." But if a sufficient number of living germs is properly introduced into a susceptible host, they increase in numbers, stimulate the cells in their immediate vicinity to cell-division, and a round-cell infiltration occurs about them. By this their whole mass may become entirely encapsulated and they destroyed, with a gradual absorption of them and their products accompanied by little or no general symptoms. Or, though numbers of the germs die, others continue to live and multiply, their poisons kill the neighboring tissue cells, they overcome the initial barrier and are taken by the lymph channels to the lymph glands. Here the germs themselves are stopped, but their toxins find their way to the general circulation and constitutional symptoms arise, with general leucocytic reaction. The germs do not often get beyond the nearest group or groups of lymph glands, where the same process is carried on, with enlargement of lymph glands, that occurred in the subcutaneous tissues in the first place. By the general distribution of the vaccine poisons the blood-forming organs are stimulated to the formation of leucocytes (and thereby of free nucleïnic acid) and of nucleins. The latter, not only from the general circulation but also locally in the infected lymph glands, aid the phagocytes in the destruction of the germs, and probably also diminish or destroy the virulence of the toxin. For a longer or shorter time the body cells continue capable of the formation of this nuclein, so that within this time a re-infection is more strongly opposed than in the beginning. If the microbes pass the nearer groups of lymph glands, or if their toxin is more than ordinarily virulent, or the host more than ordinarily susceptible, the germs reach the general circulation and are distributed to the various organs throughout the body. According to the different resistive powers of these organs (dependent on factors which are mostly unknown) a stronger or weaker reaction takes place. In those organs which are of highly resisting power the germs are probably at once destroyed; in the places of less resistance the process is more prolonged, the germs have time to establish themselves temporarily before being finally destroyed. Hence probably results the eruption of the eruptive fevers. The reason the germs are not oftener found in these foci of resistance is that they are soon killed even here, and fail to react to the ordinary staining reagents. Erythemata may perhaps be due to the local effects of the toxin, or to other substances than the toxin, on the capillary circulation.

The same sort of process takes place in other infectious diseases, whether very small amounts of very virulent germs or larger amounts of less virulent germs are introduced. When sterilized or filtered cultures, however, are injected, the toxins are at once taken into the general circulation, and the same general reaction occurs as in vaccination when the germs or their toxins have broken through the initial barrier of round-cell infiltration. There is this difference, however; the toxin is in one dose and does not tend to increase in amount. Increase is accomplished by subsequent injections only.

The injection of serum of recently immunized animals into a healthy animal introduces body nucleins which are germicidal, perhaps directly antitoxic, and perhaps also some toxin. They stimulate the normal physiological activity of the protective cells and thus, besides supplying extra germicide and perhaps antitoxin, grant a short-lived immunity from the attack of any ordinary number of microbes.

How is recovery promoted in those already infected? By the natural processes already indicated, if the infection be mild enough. If the incubation period of a mild culture be shorter than that of a more virulent one, the body cells may be stimulated to produce enough germicide and antitoxin to enable the animal to cope successfully with the stronger culture, provided the inoculation with the weaker be made early enough. Otherwise the animal will fall under a double burden of intoxication. In the same way injections of toxins, if given early enough, may be efficient. This explains the success of Koch's tuberculin in selected cases, its worse than failure in advanced cases.

The antitoxic serums act, as before stated, by stimulating the body cells to the formation of protective cells (leucocytes) and nucleins, and by adding more germicide and antitoxin to that already present. If given late in the disease it is of less effect, because the body cells have either been already stimulated to their utmost by the toxins of the infection, or are so paralyzed by them that they cannot respond to the serum stimulation, and the only help the serum can give is to add a little germicide and antitoxin. If the body cells are not paralyzed or stimulated to their utmost, the serum may shorten the attack, though administered late.

It is evident that in the phenomena of infection and immunity we have to deal chiefly with chemical and physiological factors, the study of which has been begun but is very far from being complete, or even adequate to giving a sure explanation of these phenomena. It is of physiological chemistry then that we must ask whether the essential microbic poisons be in truth nucleins, as seems probable, and what their specific actions are; whether the serum of immunized animals contains nucleins which act specifically to destroy or render harmless the microbic poison, and how they originate and act; and finally what are the other substances in cultures and serums and what their effects on the animal organism. When these questions are answered, and it is not too much to ask that they should be, we shall be in a position to command a *knowledge* of immunity instead of a *theory*, or at least a theory based upon knowledge instead of assumptions of such bodies of unknown structure as alexines, antitoxins, lysines, soz-albumins, defensive proteids, and the like.

To summarize briefly:

(1) Infection is due to the introduction and spread throughout the body of bacterial poisons, proteid in nature, probably nucleo-albumins and nucleins, derived from the germ-substance of the bacteria.

(2) Resistance to infection is *natural*, by means of physiological and chemical processes (leucocytosis, phagocytosis, and the formation of germicidal and antitoxic nucleins), and *artificial*, by means of antiseptics, induced tolerance for the poisons, and increased capacity to destroy the poisons and germs.

(3) Induced tolerance is secured by the administration of increasing doses of the poison, beginning with a non-toxic dose, and is due perhaps to altered cellular metabolism.

(4) Increased capacity to destroy germs and poison is secured by the administration of the serum of animals in whom induced tolerance has been established, and is due probably to the germicidal and antitoxic nucleins in the serum, which also stimulate the formation of such nucleins in the body, by the activity of the cells.

(5) The immunity conferred by these methods is more or less temporary, and is never absolute (22).

One word as to therapeutics. The next advance in the production of immunity and the promotion of recovery from the infectious diseases will be the use of the nucleins from the so-called antitoxic serums, freed from the other undetermined substances of the serum, and of a dose whose strength is known exactly by its weight, not merely approximately by its results on animals.

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Clinical Department.

A LARGE UTERINE FIBROID COMPLICATED BY STONE IN THE BLADDER; ABDOMINAL HYSTERECTOMY AND LITHOLAPAXY; RECOVERY.[1]

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BLADDER symptoms of one kind or another are not infrequent complications of uterine fibroids. Indeed, the exhausting and distressing symptoms due to bladder pressure are strong indications for removing the fibroid. Yet the bladder is often unaffected, even when the weight and pressure of the uterine tumor seem extreme. In some instances the patient is not annoyed by even so trivial a symptom as frequent micturition, though the tumor is a large one. In others a mass no larger than an orange may affect so seriously the bladder that health and comfort are vitally impaired.

The explanation of these paradoxical conditions lies in the situation of the bladder with reference to the tumor. Large masses well above the pubes often leave room sufficient between the symphysis and the cervix to allow a tolerable distention. On the other hand, small tumors may press directly upon the bladder, to which they are often adherent. Urinary symptoms are due at times to variations in the shape and the size of the bladder. The closely adherent bladder wall is stretched and dislocated with the enlargement of the tumor, until at times the deviation from the normal is remarkable. In one instance in dissecting the peritoneum from the posterior wall of a large multiple fibroid I made an opening in the bladder two inches long; and yet I was at work on a surface of the tumor situated at least nine inches from the urethra. The adherent bladder had been gradually dragged into this extraordinary position by the enlargement of the tumor. The wound in the bladder was closed by a continuous silk suture, which ultimately found its way into the interior and caused the formation of a large stone. In another case I found the bladder attached to the left of the tumor and extending fully half-way to the sacrum. Though these excessive variations in shape and in size do not necessarily cause pain, frequent micturition, or even discomfort, they may be the source of a great variety of bladder symptoms. Great care should therefore be taken always to recognize a possible dislocation of the bladder in connection with uterine fibroids, for in separating the tumor from its attachments in such cases, the bladder or the ureter is almost sure to be injured.

Symptoms referable to the urinary apparatus, varying in severity and extent, may be directly dependent upon uterine fibroids, or simply coincident with them. Stone in the bladder is undoubtedly of extreme rarity in connection with uterine tumors. Dr. Homans, whose experience in the diagnosis and treatment of large fibroids is probably second to that of no surgeon in this country, informs me that he has never met with this complication, except as a post-operative symptom, when a calculus forms upon a suture. I have neither seen nor read of such cases, though I have twice crushed a stone that had formed about a suture.

Though a calculus may exist in the bladder coincident with a fibroid of the uterus, that a stone may thus form independently of the tumor is certainly improbable. For in many instances the effect of the tumor is to produce an inflammation of the bladder favorable for the formation of stone. On the other hand, if the stone results from cystitis alone, it is extraordinary that calculi are so unusual in women, for cystitis is a common event in the history of fibroids. The truth is, probably, that the urine itself in rare instances favors the formation of stone and provides a nucleus upon which a cystitis adds rapidly a phosphate deposit.

Mrs. H. W., aged fifty-six, a patient of Dr. Spafford of Cavendish, Vt., entered St. Margaret's on September 14, 1895. She had been married twenty-eight years, and though well and strong had never become pregnant. Six years ago she first noticed an enlargement of the abdomen which was accompanied by malaise, dyspnea, and edema of the feet and legs. Flowing was not unusual nor excessive. The tumor was at first thought to be ovarian, but at the end of a year its fibroid nature was evident. During the next two years she submitted to various kinds of treatment. For four weeks electricity was intelligently, though unsuccessfully, applied. No better results followed two years' experience with Indian doctors. The first symptoms of stone appeared two years ago, with inflammation of the bladder, painful micturition, and passage of gravel. A year ago she herself discovered that she had a stone. In the meantime the abdominal tumor increased in size and in weight; the pressure upon the stone in the bladder caused agonizing pain; the general health became much impaired. I found the abdomen greatly distended by a large fibroid of the uterus, which did not differ materially from other tumors of its class. The general condition was extremely unpromising. Examination by vagina and by urethra was impossible without an anesthetic. Her groans and cries disturbed the whole hospital.

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[1] Read before the Boston Society for Medical Improvement, October 21, 1895.

September 16, 1895, with the assistance of Dr. Brewster, I removed the whole uterus. The floor of the pelvis was covered by peritoneum dissected from the tumor and united by continuous silk suture. The stone in the bladder was not detected during the intra-abdominal manipulations, nor by manual examination of the bladder after the removal of the tumor. The failure to detect a stone weighing over 600 grains by intra-abdominal examination seems remarkable, and even now inexplicable. I was so sure that none existed that urethral sounding seemed hardly worth while. After closure of the abdominal wound, however, I passed a sound into the bladder and detected at once a large calculus. It seemed best to postpone removal of the stone until convalescence from the hysterectomy should become established.

September 23d, the stone (weighing 670 grains) was successfully crushed and evacuated by means of the Bigelow instruments. Numerous fragments too large to pass through the largest-sized tubes were removed with forceps. Recovery from both operations was rapid and complete. She was discharged well October 14th.

The urinary symptoms usually met with in connection with uterine fibroids are (1) frequent micturition from pressure, (2) cystitis, (3) hydronephrosis or pyonephrosis from pressure upon the ureters. One or all these symptoms may make operation imperative. Considering the etiology of stone in the bladder, one would expect the more frequent occurrence of this complication. In a hasty search through the literature since 1888 I have not been able to find a case similar to the above.

On the other hand, cystic calculus forms with tolerable frequency upon sutures or ligatures used to close bladder wounds made in the course of hysterectomies or other pelvic operations. For a suture or a ligature to be discharged into the bladder after such opertions and to become the nucleus of a stone, a wound of the bladder wall, with suture or ligature, is not essential. In one case I found a large stone formed upon a piece of silk that had been used in tying a portion of the pedicle of a fibroid. I was informed by the assistant in this case that the bladder was not even wounded. It is possible that a small portion of the bladder was tied into the pedicle, and that the knot subsequently made its way into the bladder. In a second case, already referred to, I closed a wound some two inches long by means of a continuous suture of silk. A year later I removed successfully a large stone which had formed upon this piece of silk. The symptoms meanwhile had been severe and disabling.

Considering the frequency of stone from this cause, it is a question whether on the whole it would not be better to use catgut or other absorbable material for the closure of bladder wounds. Even this precaution would not prevent the occasional formation of stone upon ligatures and sutures of silk placed in such close proximity to the bladder as to make their way into it.

A Fin-de-Siècle Compliment. — The *Journal of the American Medical Association* at the close of its notice of the Medical and Surgical Report of the Boston Children's Hospital, indulges in the following somewhat curiously-worded compliment: "Few hospital reports are of more practical value, and as an exponent of *fin-de-siècle* medicine and surgery its authors will take a high rank."

PULMONARY INFARCTION.

A Case Occurring Six Days after Hysteropexy; Thrombosis of the Left Iliac Vein; Pneumonia; Death; Autopsy.

BY EDGAR GARCEAU, M.D., BOSTON,
Surgeon to Out-Patients, Free Hospital for Women.

C. S., an American woman, was forty-two years old and unmarried. She had always enjoyed good health until seven years ago when she had an attack of "nervous prostration," brought on by teaching a kindergarten school. Since that time she was nervous, but was able to control herself by the exercise of an unusually strong will. She was of medium height and was well developed and nourished. She had always menstruated regularly, but had more or less pain just before the menstrual flow. During the few months preceding her operation the pain had been getting severe; but her most distressing symptom was persistent, nagging backache, which never left her and even kept her awake at night occasionally after a hard day's work. The backache was so annoying that she was perfectly willing to accept any form of treatment which offered relief. Besides the backache she had at times pain in the region of the coccyx; when she had both together, life was a torture.

Examination showed retroversion of the uterus in the third degree. The uterus was easily replaced but could not be kept in position by any form of support, owing to the smallness of the vagina; a number of supports were tried without avail. During the course of treatment with supports, which extended over a period of two months, there developed on the right side of the uterus a hard, tender swelling about the size of a pigeon's egg; it disappeared under the application of glycerine tampons, and at the operation no trace of it was found, and no evidence existed either in the tube or ovary which would seem to indicate that these organs had been involved. It was, therefore, without any doubt a cellulitis of the right broad ligament induced by wearing supports which were not tolerated. This circumstance is mentioned in this connection because simple, uncomplicated pelvic cellulitis is rare, and has even been denied by some.

The treatment with supports having failed, the operation of hysteropexy was proposed and accepted. It was done on the 14th of last May at the Baptist Hospital, Dr. C. H. Hare assisting. Two silk sutures were used to fasten the fundus of the uterus to the abdominal wall. Silkworm-gut was used to sew the abdominal incision, and an extra continuous suture of catgut was used to sew the transversalis fascia together. Both ovaries and tubes were perfectly normal. Everything went well until the sixth day when, without any premonitory symptoms, save a slight nausea and malaise during the daytime, the patient in the middle of the night went into a profound and complete collapse which came on with great suddenness. When she recovered consciousness she complained of most excruciating pain in the pit of the stomach. She was bathed in a cold clammy perspiration; the pulse was 160 and very feeble; temperature, 96.4°; respiration, 32; tongue, slightly coated. The abdomen was slightly tympanitic, but not sensitive; vaginal examination showed no fulness in the cul-de-sacs; the uterus was in good position. The bowels had moved two days before, and flatus had been passed on the previous day and also during that night. She was menstruating at the time of the collapse, the catamenia being one week ahead of time.

The following possibilities were presented for consideration. (1) Hemorrhage. (2) Intestinal obstruction: (*a*) incarceration; (*b*) volvulus. (3) Colic. (4) Hemorrhagic infarction of the lung.

Hemorrhage could not absolutely be excluded, but was thought improbable from the length of time that had elapsed since the operation; besides this, the physical signs of hemorrhage were not present. Intestinal obstruction from volvulus or incarceration could not be absolutely ruled out supposing that a large coil of intestine were involved. Colic of a severe type sometimes produces great prostration and collapse in a weak person, and it was thought that this was the explanation of the trouble, especially as it was found that she had been given egg-lemonade and milk during the afternoon. Embolic infarction was thought of, but was considered improbable because of the excruciating abdominal pain, which suggested some abdominal lesion; besides this, severe dypsnea, which is a prominent symptom when a large pulmonary vessel is suddenly occluded, was not present in this case.

After consulting with Dr. S. Breck, it was decided in view of the ease and general improvement which took place after an injection of morphine had been given to wait a while. The next day the urine was examined and was found to contain a trace of albumin and casts; the amount was scanty. All question about involvement of the bowel was set aside by a copious stool which was produced by giving salts. The diagnosis of pulmonary infarction was finally made with positiveness forty-eight hours after the collapse, when bright red sputum was expectorated in considerable amounts. Under the influence of forced stimulation with strychnia, alcohol and food, she improved very markedly until two days later or four days after the collapse; then, great edema of the left lower limb appeared during the course of the night. Soon after this, cough, pain in the lower part of the left chest, and rusty expectoration announced a pneumonia. She died a few days later.

The autopsy was performed by Dr. A. H. Wentworth, six hours after death. The kidneys showed evidence of slight cloudy degeneration, especially glomerular (post-operatary). The spleen was slightly hyperplastic. Lungs: the left lower lobe was the seat of several embolic infarctions as well as the seat of true croupous pneumonia (secondary to infarction). In the left common iliac vein was a thrombus firmly adherent to the walls of the vessel and partially organized; it occluded the whole lumen and extended downward into the left femoral vein to the middle of the thigh. No thrombi were found in the veins of the left broad ligament. The peritoneum showed not the slightest trace of inflammation. The uterus was firmly held fixed to the abdominal wall by the sutures, and adhesions had already formed (nine days), but they were easily broken up. The omentum was firmly adherent along the whole line of incision internally. The union of the abdominal wound was firm. The catgut used in sewing the transversalis fascia was not in the least affected and was as solid as when first applied; it was medium sized catgut.

The bacteriological examination by Dr. F. B. Mallory showed the presence of pneumococci in the lung and in the emboli; no other germs were found in the emboli. The culture taken from the thrombus of the iliac vein was not satisfactory owing to mixed infection while it was being taken.

The chief point of interest in this case was the great difficulty in arriving at a correct conclusion as to the cause of the collapse. The excruciating abdominal pain diverted attention from the true condition and suggested that some abdominal lesion was present. Of the three lesions possible, namely, hemorrhage, colic, and intestinal obstruction, the evidence was in favor of colic, and yet by a very small margin. Hemorrhagic infarction was merely thought of at the time, but was dismissed as being entirely improbable. So great was the perplexity that preparations were made for opening the abdomen; and it was only because of the very marked improvement following the injection of morphine, which seemed to favor the colic hypothesis, that it was decided to temporize.

The question arises in view of the disastrous result of this case, Is it to be considered justifiable to subject a woman to abdominal section for the cure of retroversion without adhesions? For my own part I should be strongly disinclined to do it again, but should choose one of the vaginal operations. Dürrhsen's is a good one, and is especially applicable to simple uncomplicated cases. In this operation the fundus of the uterus is fastened to the anterior wall of the vagina by sutures. In the cases complicated with adhesions, Pryor's operation[1] would appear to be feasible. He incises the posterior cul-de-sac, breaks up the adhesions and excites plastic inflammation by an iodoform-gauze packing which he places behind the cervix. This leads to the formation of an exudate which in contracting pulls back the cervix and acts very much as the normal utero-sacral ligaments do in keeping the fundus forward. Following Boisleux's method,[2] Pryor treats affections of the appendages as the occasion demands at the same time, even extirpating them if it is necessary, through the incision in the posterior cul-de-sac.

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LIQUOR AMNII ESCAPING FROM AN UNOCCUPIED SUBDIVISION OF FETAL MEMBRANES.

BY CHARLES H. MORROW, M.D., GLOUCESTER, MASS.

I WAS summoned on August 14, 1894, to attend Mrs. H., who had all the usual symptoms of an approaching abortion; the os was not dilated at any examination and no product of conception was known to have escaped, nor did any afterward escape to my knowledge. She believed that she was pregnant about four months, this being her second pregnancy. As the symptoms subsided without a perceptible diminution in the size of the uterus, it was thought that the treatment had prevented an abortion.

About November 1st she informed me that an escaping fluid compelled her to wear pads which only partially absorbed it, her clothing and lower extremities being generally somewhat moist; it was clear that the escaping fluid was the liquor amnii, and I informed her that in spite of the complication she might still bring forth a living child. She could take but little exercise and became anemic and debilitated.

She was taken in labor on November 28th, about six weeks from the time she had first noticed the escaping fluid, and was delivered of a living female child of average weight, but presumably more than four weeks premature; the quantity of liquor amnii which escaped was excessive.

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[1] New York Medical Record, July 20, 1895.

[2] De la pelvipéritonite chronique et aigüe et de son traitement. La Clinique Française. May 25, 1895.

The secundines indicated a twin pregnancy; a partition wall, which was intact, caused the membranes to form two sacs, the larger of which had contained the fetus just delivered; the smaller sac had a capacity of more than a pint and when delivered had a tear two inches in length which allowed the escape of its contents; there was no evidence that a fetus had escaped from this smaller sac during labor; remembering the symptoms of an abortion when first called, I was about to search for evidence of fetal attachment, when, observing that my patient was losing some blood and the uterus not thoroughly contracted, my attention was employed in the attempt to overcome this obstinately persisting condition. When all danger had passed, I found that the nurse had removed and destroyed the interesting secundines.

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SEPTA VAGINÆ: TWO CASES OBSERVED IN PRIVATE PRACTICE.

BY F. BOWDITCH CHAPMAN A.M., M.D., MIDDLETON, MASS.

The comparative rarity of reports of vaginal septa and the interest of such cases to the obstetrician and gynecologist has led me to report the following cases observed in my private gynecological practice.

Case I was a married woman of forty-seven years, the mother of two children. The patient came to my office complaining of leucorrhea and a displaced uterus. She said she had worn pessaries of different patterns at various times during the past few years, but stated that they never remained in position for any considerable time and gave no definite relief. They had been introduced by a country practitioner who had never examined her with the speculum. Examination bimanual and with Sim's speculum determined retroversion of the uterus and marked chronic endometritis. The digital examination found an obstacle in an irregular semilunar-shaped septum, almost entirely closing the posterior cul-de-sac, taking origin from the posterior wall about one inch below the cervix. The septum was markedly thickened on the left side, and was continued in two incomplete fibrous ridges toward the anterior column. Examination with speculum was necessarily unsatisfactory, the patient complaining, moreover, of considerable pain and tenderness from pressure of the instrument. The appearance of the septum with good light was somewhat like ordinary scar tissue as we find it in mucous membranes. There was an old laceration of the cervix, but not noticeably associated with the other abnormal condition.

The patient was anesthetized the following day, the septum divided, and examination completed. There was moderate hemorrhage. The retroverted uterus was moderately adherent. The cervix was dilated and the entire endometrium thoroughly curetted and swabbed out with iodine. I did not think the laceration of the cervix sufficient to merit repair. The retroversion was treated by persistent tamponades of glycerized cotton, and the pessary eventually fitted. The case first came under observation June 6, 1894; the pessary was fitted September 28th. The patient was last seen by me in November; she was not then wearing the pessary — said she did not need it, but that it never caused her discomfort.

There was, I think, no neurosis connected with this case, and I am inclined to think the pain complained of in examination was due to erosion caused by the irritating discharge from the cervix. There was no history of traumatism in labor or of instrumental delivery. Her last confinement—in 1880, I think—was followed by a tedious convalescence. Nevertheless, I have been inclined to regard the case as possibly of traumatic origin, especially on account of the thickness of the septum and its divergence to the left.

Case II was an unmarried girl of seventeen years, first seen by me August 22, 1894. The patient was brought to me by her mother, who said the girl had never menstruated but complained of pelvic pain. The girl was large, but ill-nourished in appearance. Digital examination was interrupted by an almost complete transverse septum of the vagina. The hymen was incomplete. The septum was apparently of uniform thickness, and gave the impression to the examining finger of a rather inelastic complete hymen. It was perforated sufficiently to barely admit the tip of the index finger, and was located about one and one-half inches from the introitus. Examination with speculum was unsatisfactory and painful. The membrane was ruptured with the branched steel dilators, further dilated with the fingers, and the examination completed. Anesthetic was refused, and the dilatation was, of course, painful. Slight hemorrhage followed.

The completed bimanual examination discovered an undeveloped uterus, abnormal in shape, and with markedly elongated cervix. The speculum was reintroduced, the uterus drawn down with the tenaculum, and a probe introduced after a few trials; finally a small sound was passed. The instruments seemed to enter two distinct pockets. I am satisfied it is a bicorn uterus. The genitalia were normal in other respects.

General hygienic directions were given and iron ordered.

The patient passed from my observation shortly after, but was returned by her mother in February, 1895, on account of a small tumor in the right breast. It was removed, and the microscopic examination showed it benign. The girl was reported by her mother as having menstruated normally in December. From her statement she suffers no unusual distress before or during her menstruation.

There is no history of late menstruation in the family. The parents were born in Nova Scotia. The girl has been occasionally under my care for minor indispositions and is now (November, 1895) as well as most girls of her age, and her menstrual functions are normal.

Then and Now. — In the year of our Lord, A. D. 1870. Scene, surgical ward.

Surgeon. — How is Jones doing?

House Surgeon. — Extremely well, sir; the wound is suppurating nicely.

Surgeon. — That's all right.

In the year of our Lord, A. D. 1894. Scene, same surgical ward.

Surgeon. — How is that amputation of the breast?

House Surgeon. — I'm sorry to say, sir, the wound is suppurating.

Surgeon. — What! Suppurating!!! Do you say suppurating? Well, I'll be —

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. G. MUMFORD, M. D., SECRETARY.

Regular Meeting, Monday, October 21, 1895, Dr. Clarence J. Blake in the chair.

ANATOMICAL SPECIMENS.

Dr. E. G. Cutler. I have here a tape-worm from a child seven years of age. The family history was negative. She had had measles and no other illness. Four years ago she commenced to pass bits of tape-worm. The first piece examined after a cathartic was three feet in length. Since then she has passed single segments and short pieces of the worm almost daily according to the mother. Medical treatment had been tried several times without effect. She entered the Massachusetts General Hospital the middle of September. The history was that she had felt rather dull for the two weeks previously, had vomited several times in the afternoon, and occasionally had headaches. Slept well. I waited a day or two until I saw the segments of the tape-worm, and then having discovered that they were of the form tenia saginata she was to receive a dose of pelleterine. We first gave her an enema in the afternoon. She was to have one-third of a bottleful nearly of Tanret's preparation of pelleterine, which is the tannate and supposed to be the best form of the drug, the first thing the next morning. The supper the night before, after the enema, had been a light one, consisting largely of milk and egg. The two drachms of pelleterine were given in half a tumblerful of sweetened water, and the child was to take a tumblerful of lemonade afterward, beginning one-half hour after the dose of pelleterine had been taken, and sipped gradually for two hours. The third hour after taking the pelleterine she was to receive some sulphate of magnesia in a large bulk of water. That unfortunately was not given in the way directed. She received it in a small bulk of water so that it did not act, and some six hours later a dose of calomel and soda was given; and the child when she began to have desire to move the bowels was placed on a chamber which was filled with hot water, and an enema given, and the worm with the head came away. Here is the entire parasite. It has four sucking discs and the pigmented head.

At the same time I want to speak of a case I saw some two years ago in a child four and a half years of age, troubled with the same variety of tape-worm, the tenia saginata; the child was treated successfully in the manner described above, and the entire worm with the head was recovered.

The observations which I have made lead me to believe that the worm is not killed, but simply anesthetized by the drug, as out of the body it will remain more or less torpid twenty-four hours after the dose of pelleterine has been given, perhaps longer. After the dose of pelleterine a good smart cathartic, a bulky one, either something which causes a great amount of liquid to be thrown into the intestine or a large dose of castor oil, and accompanied by an enema at the last moment, will sweep the whole thing out. Both the tape-worms in the above cases kept alive twenty-four hours after they came out of the intestine. At the end of that time they died. I suppose if one exercised care the life of the parasite could be prolonged even more. This form (the tenia saginata) is the only one I believe which spontaneously comes away in several joints at a time. It is the only one commonly seen here. When I was a student there were one or two cases at the hospital of the tenia solium, the pork tape-worm; but since then, for twenty years, I have never seen anything but this beef tape-worm.

Dr. Goss: I think pelleterine is a pretty satisfactory remedy. I recall three cases within the last year treated with it, in two of which the worm was expelled entire; in the third there was a little doubt owing to the interference of the people. I have usually given it as Dr. Cutler mentioned. I have had more success with pelleterine than with any of the other remedies for tape-worm. All that I have seen in recent years have been the beef tape-worm.

ORAL COMMUNICATIONS.

Dr. Henry Jackson: I have a couple photographs of a very extensive and in some ways rather unusual syphilide. There was nothing in the patient's previous history of importance.

P. C. entered Boston City Hospital, August 20, 1895.

Previous history negative until two years ago. Two years ago he had a universal skin eruption, with red spots. At this time had sore throat. Hair did not fall out. No history of chancre. Hard drinker. The onset of the symptoms for which he entered the hospital is indefinite. The patient gave different dates, but his brother thought he was well some six weeks before entrance.

Physical examination showed a man of poor physical development, rather thin; muscles flabby; countenance dull and apathetic; mental condition much impaired. Heart, lungs, liver and spleen not abnormal. Lymphatic glands enlarged, especially in groin, back of neck, elbow and axillæ. Right knee and left wrist swollen, rather fusiform in shape, somewhat red and tender. About the lips ulceration, extending into the mouth. Over the face, and especially on the forehead, reddish, dull-colored patches with scaly surface. Skin thickened over body and trunk. On the extremities (palms and soles) were dull red patches, all thickened, and most of them covered with crusts about a quarter of an inch high; these spots were about as large as a ten-cent piece. No scratch lesion. On the penis was an old scar, and extensive, moist, irregular, ulcerated surface.

August 22d. Mild delirium. Weaker. Much pain.

August 25th. Delirium has increased. Little intelligence. Lies on his back with mouth open.

Tincture of digitalis and brandy. One-eight of a grain of corrosive sublimate subcutaneously, and repeated every day for five days. Iodide of potassium in increasing doses, up to twenty grains a day.

August 31st and September 1st. Little diarrhea.

September 4th. Better. Answered questions.

September 7th to 10th. Rapid disappearance of lesions.

September 14th. Subcutaneous injections again, three doses.

October 1st. Mind improved. Reads in bed.

October 10th. Mental condition pretty good.

This case offers several interesting points. In the first place we have a very severe syphilitic lesion in a man who had not received any anti-syphilitic treatment. The photograph showed very sharply the joint lesions, which are not common. The man's general condition was such that death seemed imminent unless the disease could be quickly controlled, and for this reason the mercury was given subcutaneously. I did not at any time find evidence of any lesion of the brain, cord or heart, to account for the severity of the symptoms. For three weeks the pulse ranged from 110 to 120, and the temperature was 101°, with moderate variations.

After improvement began the mercury was given internally in the form of the red iodide. No uncomfortable symptoms followed the subcutaneous administration of the mercury.

Dr. Walter Channing read a paper on

THE IMPORTANCE OF FREQUENT OBSERVATIONS OF TEMPERATURE IN THE DIAGNOSIS OF CHRONIC TUBERCULOSIS.[1]

Dr. R. H. Fitz desired to acknowledge his indebtedness to Dr. Channing for the opportunity of seeing the unusual and important case reported in such detail.

The value of thermometric observations in certain manifestations of tuberculosis is universally recognized. A suspicion of pulmonary tuberculosis is often aroused before the diagnosis is established by the examination of the lungs and sputum, and the progress of the disease is often more clearly indicated by the temperature-chart than by other records of signs or symptoms.

At some time or other in the progress of tuberculosis, wherever localized in the body, an elevated temperature is to be expected as the result of the bacillary infection. According to the quantity and quality of the bacteria and the frequency with which they or their products are admitted into the circulation, the range of temperature will vary, and irregularities in the course of the fever arise, as the tuberculosis is limited to the brain, lungs, intestines, kidneys or elsewhere in the body. In most cases of chronic tuberculosis a mixed infection plays an important part in determining the irregularities of the temperature. This is nowhere more strikingly seen than in pulmonary tuberculosis, in which the hectic fever is usually so conspicuous as to have become a popular diagnostic sign.

It is to be remembered, however, that the elevated temperature in tuberculosis is always atypical. Febrile temperature is not at all times present, even in pulmonary tuberculosis; it may be absent for weeks in peritoneal tuberculosis, for months in articular tuberculosis, and for years in glandular and in cerebral tuberculosis, although a fresh bacillary invasion from the cheesy foci may rapidly prove fatal. This atypical course of the temperature, even when there is a continued elevation, proves of the greatest importance in the differential diagnosis of acute general tuberculosis and typhoid fever.

In Dr. Channing's case the frequent elevations of temperature gave evidence of a constant source of infection, with acute outbreaks. The latter never gave evidence of any tendency to suppuration, and the periods of pyrexia were unaccompanied by such functional nervous disturbance as might be attributed to hysteria or other mental derangement. The accompanying affection of nutrition, the loss of flesh and strength, always slowly progressive, although with occasional intermissions, were evidence of a probable organic affection. The marked periodicity, at times, of the fever, permitted the possibility of a malarial infection, a possibility soon laid aside by appropriate treatment.

The evidence presented by the prolonged fever, with its acute exacerbations, and by the waste of tissue despite every effort to sustain nutrition, were evidence of a chronic infectious disease, either tuberculosis or malaria, or some obscure affection, such as malignant lymphoma.

The failure to improve under anti-malarial treatment and the absence of glandular or splenic enlargement led, by exclusion, to the diagnosis of a tubercular process, the physical and rational signs favored its localization solely in the Fallopian tubes, and the subsequent course of the disease demonstrated the correctness of the diagnosis.

Dr. A. T. Cabot said that he had been much interested in the case which Dr. Channing had presented with such thoroughness. He said that at the time he first saw the patient, with a history of a somewhat prolonged disturbance of the bowels and with a small abdominal tumor, that there was great doubt as to the connection of the tumor with her general condition.

When he examined her without anesthesia, it was not possible to say whether or not there was a collection of pus in the mass; but under chloroform, the examination made with Dr. Bull convinced him that it was not a suppurating tube or pelvic abscess as there was not the matting together about the parts which is usual in those conditions, also, because he felt the rupture of a small cyst on the surface of the tumor during his examination, such a cyst as was described by Dr. Councilman as found in the post-mortem.

The puzzling thing was to associate a tumor of this small size with an illness which had caused the patient to lose flesh so rapidly. It seemed to Dr. Bull and Dr. Cabot that if the tumor were the cause of all this, it must be by being malignant, in which case but little advantage could probably be obtained by operation. If it was not the cause of the extreme illness of the patient, it did not seem that the time at which they saw her was a favorable one for its removal; or that its removal was likely to greatly benefit her.

When he saw her later and made a second examination without ether, he did not make a pelvic examination as the mental condition did not admit of such examination, but by abdominal palpation he thought he discovered ascites and was therefore led to concur with Dr. Fitz and Dr Channing in the belief that the condition was probably tuberculous. In that view of the case, he thought that an operation might prove of benefit, although with so large a mass which could probably not be thoroughly removed, the amount of relief to be obtained was somewhat doubtful.

Dr. F. C. Shattuck: It is very seldom that an opportunity is offered for such a prolonged and continuous observation of temperature as in Dr. Channing's case, and the opportunity was fully availed of. The continued fever in this case was certainly an important diagnostic factor, especially in combination with progressive failure and local disease. But we must not forget that the absence of fever, perhaps for long periods, does not enable us to exclude tuberculosis. This has been alluded to by Dr. Fitz. In the inflammation of serous membranes, non-tubercular as well as tubercular, there is no definite relation between the lesions and the temperature. In peritoneal tuberculosis the temperature may be even subnormal continuously for considerable periods. We think of fever as an almost necessary accompaniment of pulmonary tuberculosis at some time or other. I have in mind two cases of chronic phthisis in which I have good reason to believe that fever has been practically absent for years. In one, with disease of twenty-five years' standing, the wife of the patient, a woman of unusual observation and devotion, assures me that fever is certainly of the rarest occurrence, and I have not found the temperature raised when I have taken it. The other case is of perhaps seven years' standing, a vigorous and an active man, who, within two months of first using the bicycle rode fifty miles in one day without overfatigue. In the sputum of both cases bacilli are abundant. During the past year I have used injections of tuberculin for diagnostic purposes in some obscure cases, just as it is used in cattle. If there is no reaction from a small dose a larger one is given. If no reaction follows this the presumption is that the disease is not tubercular. Naturally the number of cases to which this test is applicable is not very large, and I dare say that the number of my cases does not exceed half-a-dozen. But the results thus far seem to be satisfactory and encourages me to believe that the test is of real value.

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[1] See page 609 of the Journal.

Dr. Cutler: As Dr. Shattuck has said, some cases of limited pulmonary tuberculosis run without fever. Most of the cases, however, have a considerable amount of fever, and the temperature is of very considerable value as a means of prognosis in tuberculous cases. I should say that in a case such as Dr. Channing's it would give probably the best evidence that could be obtained of the existence of the trouble. Presumably the tubercle bacilli could not be discovered in any way in such a case. It certainly would be a very difficult matter to attempt to prove them in the stools. That has been tried many times unsuccessfully. So far as evidence from examination of the blood is concerned it is found that there is not a leucocytosis in cases of tuberculosis except there be a hectic condition, though there is anemia. I should suppose in a case of this kind that corroborative evidence might be obtained from examination of the urine. There must be some kind of elimination by the kidneys of some of the poisons generated, which would be shown by the presence at least of some albumin and casts and perhaps also some toxins. I do not know that this point has been worked out sufficiently to prove of great value. A prolonged observation of the temperature remains of the first importance in the diagnosis of cases of obscure nature such as this. I have used tuberculin in several cases, but not where the diagnosis was uncertain; I have never tried it except in a very few instances, and I did it then with a good deal of hesitancy. Professor Strümpel has written a very interesting paper, the title of which is "Concerning Fever in Pulmonary Tuberculosis and its Prognostic Value." It is published in the *Münchener Medicinische Wochenschrift*, No. 50, December 13, 1892. He divides the cases into subfebrile, intermittent hectic, and remittent and continuous febrile, speaks of quite a number of cases in which the temperature does not rise at all. Those are cases in which the tubercle is encapsulated and the foci are walled off. Later an ulceration may occur and a slight amount of fever be present.

PATHOLOGICAL SPECIMENS.

Dr. Richardson: I have brought a few specimens recently removed which seem worthy of being shown at this Society.

(1) Osteo-sarcoma of the humerus; amputation at shoulder-joint. The patient, a man of fifty, without apparent cause had been for four years suffering with pain in the region of the right shoulder. Shortly before my first examination, September 2, 1895, he noticed a small swelling over the head of the humerus in front. I found everything about the shoulder normal except for a superficial soft swelling under the anterior fibres of the deltoid. The mass was like a fatty tumor in physical characteristics, except that it was deeply adherent. Repeated examinations convinced me that the disease started from the medulla of the humerus, and that its malignancy would demand amputation at the shoulder-joint. The patient was therefore prepared for the loss of the limb, though he came to me thinking he had only a little neuralgia or rheumatism. Section into the tumor showed at once its malignant nature. The arm was immediately amputated at the shoulder-joint, the exploratory wound having been carefully closed, and the parts about cleansed — a precaution especially imperative in the sarcomata to prevent auto-infection. The shaft to the humerus was so extensively diseased that it broke during the manipulations of the amputation. I had observed before the coincidence of fracture of the humerus and medullary sarcomata. In one instance, for example, a woman broke her arm lifting a stove lid. Upon this fact, with that of non-union, and a large, soft callus (as it was supposed), I based a correct diagnosis of osteo-sarcoma.

In the specimen, as shown also in the sketch by Mr. Kaula, you will see the great extent of the medullary disease and the slight external manifestations of it. The tumor is separated from the line of amputation by a broad margin of healthy tissue. Had the progress been through the head of the bone the joint would have been infected early, and the prognosis therefore would have been much more serious.[2] In this patient the radical operation was performed in the very beginning, and not, as is too often the case, when the extensive recurrence which always follows an insufficient operation makes the prognosis, even after the most thorough dissection, unfavorable.

The desirability of performing our most extensive and mutilating operations for malignant disease when the lesions is small and local is shown by the next specimen.

(2) Sarcoma of the left kidney; nephrectomy; local and remote metastases; recovery from operation. Three weeks ago I removed the specimen from a woman of fifty-seven, a physician. Ten years ago, after lifting a heavy patient, she noticed a bunch in the left side as large as an orange. She herself recognized this as a dislocated kidney. The tumor increased in size, and became more or less disabling. Eighteen months ago she had a severe hemorrhage from the bladder. The bleeding began in January and lasted until March. Coincidently there was loss of weight. In the autumn of 1894 this bleeding began again, and has continued at intervals ever since. At one time there was abundant pus in the urine, accompanied by chills and fever. During the past two years pain has been a prominent and distressing feature of the case. She had always been hemorrhagic, and was supposed to be a bleeder. At one time she bled nearly to death after the extraction of a tooth.

Examination, June 19, 1895, showed a thin, cachectic woman, evidently suffering great pain in the region of the left kidney. There was a tumor in the left renal region occupying the greater part of that side of the abdomen. The tumor was hard, smooth and non-fluctuating. It was deeply adherent, especially at its upper border. Her general condition justified exploration, which was advised. The patient wished to consider the matter, and went home. I learned subsequently that she had been advised by eminent surgeons not to submit to operation. For the gentlemen who had given this opinion I have the highest regard and respect. I should doubtless have been influenced by their advice had I known it in time. I examined her from time to time during the summer, and had the benefit of consultations with Drs. Warren, Fitz, and Wood. I finally decided to explore. The chief technical objection to the operation was the history of hemophilia; the chief objection to its general advisability was the probable nature of the tumor and its possible metastases. Dr. Fitz had discovered secondary nodules in the left subclavian triangle, and the patient was coughing continually.

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[2] November 17th. The man made an excellent recovery, and was discharged well in three weeks.

October 6, 1895, with the assistance of Dr. Brewster, I removed the kidney through a left anterior cut which extended from the ribs to the ileum. The tumor was firmly encapsulated, adherent to the stomach, spleen, pancreas, and descending colon. Enucleation was successfully accomplished, and the mass removed without the loss of a tablespoonful of blood. No secondary hemorrhage followed. The tail of the pancreas was resected in separating the kidney. Recovery from the operation was satisfactory and complete, though a troublesome cough persisted.[8]

The operation was performed at her urgent request because she "preferred to die on the table rather than suffer any longer."

The specimen shows an extensive degeneration of the left kidney, which, however, seems entirely confined within the limit of its capsule. A large portion of the mass has broken down. Dr. Whitney's diagnosis is sarcoma.

This case and the specimen make one thing conspicuous, that an early operation, when the tumor was no larger than an orange, would in all probability have been permanently successful. Twelve or fifteen nephrectomies for various lesions have convinced me that this operation is one of the most valuable in surgery; that its immediate dangers are slight if the organ has been affected long and extensively enough to throw the function of secretion gradually and successfully upon the other kidney; that in malignant neoplasms the operation should be performed as early as possible; and that in tubercular and other disabling inflammations, total extirpation promises brilliant results.

(3) Malignant adenoma of the uterus; abdominal hysterectomy; recovery. This specimen was removed October 17th from a woman of fifty-five, in whom the chief symptoms had been severe and persistent uterine hemorrhage. Dr. Whitney examined the scrapings immediately, and pronounced them malignant. The left horn of the uterus was adherent to the sigmoid flexure by recent and easily separated adhesions. On first opening the abdominal cavity the pelvic viscera seemed totally involved in infiltrating disease. The whole uterus was quickly and successfully removed. The disease will be seen to be entirely confined to the uterus. The diagnosis, malignant adenoma, makes the cure a permanent one, and justifies the total extirpation. A long delay would have been followed by hopeless invasion of the contiguous structures. Hence, in this case, too, early radical operation was the best policy.

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MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

TWENTY-FIRST ANNUAL MEETING, DETROIT, SEPTEMBER 3-6, 1895.

(Continued from No. 24, p. 598.)

DR. GEORGE W. CALE, of St. Louis, read a paper entitled

TWO SUCCESSFUL OPERATIONS FOR TRAUMATIC INSANITY.

The author said that insanity due to injuries of the head is of rather infrequent occurrence. In 2,200 cases of insanity treated by Kiernan, 45 were of traumatic origin; while Hays records 61 due to the same cause out of 2,500 cases. Schlager reports 500 cases of insanity due to concussion of the brain. The author then considered the causes and symptoms. The first case was one of traumatic insanity, in which operation was consented to; recovery. The second case was one of acute mania following a trauma. Operation performed the same as in the first case; recovery.

DR. WM. FULLER, of Grand Rapids, Mich., had operated on two cases of insanity, due to traumatism, one in Montreal in 1870. The patient was discharged from an insane asylum as incurable. When the dura mater was opened there escaped some serum. A few days subsequent to the operation the patient was rational, but as soon as the wound closed up the hallucinations returned. He then punctured the brain in two or three different directions, but with no result except to establish drainage. The man died two months later, and a post-mortem examination revealed a tubercular abscess in the fissure of Sylvius containing about two teaspoonfuls of pus. The other case was due to syphilis, and was relieved by the removal of the pressure from that disease.

DR. J. FRANK, of Chicago, reported an interesting case of insanity in which he trephined, removing a large piece of bone. A piece of the brain was also excised for examination and seemed to be healthy. The patient, after being in an insane asylum for five years made a complete recovery and took up the thread of life where she left it. She continued in this way for one year, then relapsed. What was the reason of her recovery? In opening the dura there was a gush of cerebral fluid. Dr. Frank firmly believes that it is not the depression of the skull which produces the bad results, but that at the time of the injury there is a chronic inflammation of the meninges, or a slow inflammatory process, which throws out cerebral fluid. This fluid may be in the ventricles between the dura and the brain or in the tissues of the brain filaments themselves; and the theory of concussion, held by the profession, he believes is erroneous. He had repeatedly made experiments on dogs by rapping them on the head and rendering them insensible, and immediately thereafter effusion was found.

CHRONIC SEMINAL VESICULITIS WITH HEMORRHAGE.

DR. S. P. COLLINS, of Hot Springs, Ark., read a paper on this subject, in which he said there has apparently been little known of the pathological conditions of the seminal vesicles until within recent years. The usual cause of this trouble is the extension of gonorrheal inflammation from the prostatic urethra through the ejaculatory duct into the vesicle itself; at least, there is usually a history of a former gonorrhea with a chronic deep urethral trouble remaining. The vesicles are sometimes involved in very acute and severe gonorrheal inflammation, with or without the implication of the cord and epididymis. They may also be involved with a tubercular inflammation, although practically never primarily.

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[8] She went home October 28th. After her arrival she began to have nausea and vomiting, which resulted fatally November 12, 1895. She died evidently of an internal metastasis. From the time of the operation she was entirely relieved of the incessant pain from which she had suffered.

THE USE OF DRY HEAT OF HIGH TEMPERATURE IN THE TREATMENT OF JOINT DISEASES.

This paper was read by Dr. Wm. E. Wirt, of Cleveland, O. Shortly after reading a description of this treatment in the medical journals, the essayist encountered a case of rheumatoid arthritis in which he resorted to this method. The treatment was followed by great improvement in the motion of the joint and in the comfort felt by the patient. He also reported a case of rheumatism of a year's standing in which there was more or less fixation. He broke up the adhesions, made use of the high application of heat, and raised the temperature to 290°, which was followed by decided improvement in the ease with which the patient could move the joint and the relief of pain.

ULCERS OF THE LEG: ALL CAN BE CURED.

This paper was read by Dr. Carter S. Cole, of New York.

Dr Eugene Fuller, of New York City, read a paper on

HOW TO DIAGNOSTICATE SEXUAL DERANGEMENTS IN THE MALE.

The author endeavored to impress on the profession the fact that in the majority of instances, sexual derangements in the male are caused by pathological processes in or about the seminal vesicles, and further, that they accomplish their results by interfering with the mechanism of ejaculation. He calls attention also to the fact that this side of the question has almost wholly been neglected by preceding writers on sexual disorders, who have devoted themselves largely to psychological causes in this connection, the result being that the great majority of the profession associate sexual disturbances with some radical mental defect. Sexual derangements in the male should be diagnostically arranged in four classes: (1) those dependent on seminal vesiculitis; (2) those dependent on neurosis; (3) those dependent upon primary mental disease or degeneration; those dependent on general malnutrition and debility. The order of this classification corresponds to the frequency with which these different forms of diseases are encountered in practice. In explanation of the first class of causes the writer states that it is needless to go into detail since he has recently reviewed that subject very fully in his book just published.

Where seminal vesiculitis exists, there is generally a previous history of urethral or bladder inflammation, sexual abuse and the like, all of which are agents tending to produce localized inflammation in the seminal vesicles.

The second class of causes either inhibit or excite the sexual centre by means of reflex nervous action.

The third class of causes includes the different forms of paranoia, in which the sexual sense exists in a perverted form.

The fourth class of cases is a small one. It includes individuals, generally young or middle-aged, who make complaint that they are capable of little sexual exertion and that feelings of prostration and exhaustion result whenever coitus is attempted.

Dr. Wm. T. Belfield, of Chicago, described and presented

AN INSTRUMENT FOR SECURING ASEPSIS IN BLADDER AND PROSTATE OPERATIONS.

Dr. Thomas H. Manley, of New York City, read a paper on

THE ELEMENT OF VASCULAR COMPRESSION IN FRACTURE TREATMENT.

Dr. H. O. Pantzer, of Indianapolis, Ind., read a paper entitled

THE SIGNIFICANCE OF FISSURE FRACTURES OF THE ARTICULAR ENDS OF THE LONG BONES.

Dr. E. W. Andrews, of Chicago, contributed a paper entitled

IMBRICATION OR LAP JOINT METHOD — A PLASTIC OPERATION FOR HERNIA.

The principle of imbrication or overlapping the several aponeurotic layers of the abdominal wall may enter into other abdominal operations to advantage, as he had repeatedly shown. The present paper referred only to its use in inguinal hernia. Here the reader makes use of it to supplement and reinforce existing methods without losing sight of their good qualities. While based upon the best modern, open method, and while confessedly an outgrowth of experience with the Macewen, Bassini, Halsted, and similar operations, yet the carrying out of the imbrication idea so far changes the technique as to make it as different from them all as they are from each other, and perhaps entitle it to the term "A New Operation." It was impossible, said the author, to describe this operation without going into details concerning those which had preceded it, which he did.

The interlocking or overlapping principle of uniting the musculo-aponeurotic layers of the abdomen is in reality an outgrowth of the author's clinical experience rather than of theory. He adopted it at first as an expedient in cases where the Bassini operation seemed difficult and needed supplementing; but of late the value of the principle had seemed to him more and more evident, and he had used it in all his cases. The author concluded as follows: (1) Any successful method of radical cure must be a true plastic operation upon the musculo-aponeurotic layers of the abdominal wall. Cicatricial tissue and peritoneal exudates are of no permanent value. (2) A large strong flap, of any needed size to fill the internal ring. (3) Triplicate layers of aponeuroses. (4) Interlocking of layers giving broad surfaces of union. (5) Shortening of anterior as well as posterior wall of canal, making them mutually supporting, and relieving tension on deep sutures. (6) Cord amply protected.

FURTHER OBSERVATIONS ON THE RADICAL CURE OF RUPTURE BY THE INTRAPELVIC METHOD, WITH ILLUSTRATIVE CASES.

This paper was read by Dr. Chas. A. L. Reed, of Cincinnati.

In what essential particulars does this intrapelvic method differ from the several methods of radical operation now in vogue? It differs in the first instance, in the fact that it is intra-pelvic, while the others — Bassini's, Halsted's, McBurney's, Macewen's — are extra-pelvic.

The essential point of difference between Dr. Reed's operation and that of Bassini, consists in (1) leaving undisturbed the extremely tense facia, composing the anterior wall of the ring; (2) in leaving the cord in the position which nature designed for it, and entirely protected by the normal fascia; (3) in closing the internal ring on the inside of the pelvis, and in protecting it by a strong peritoneal pad; (4) in avoiding the menace to virility arising from transplantation of the cord, its possible constriction by an artificial ring of tense fascia, and its necessary investment by an inflammatory exudate; (5) in increasing the resistance of the parts by fortifying the fascia comprising the anterior wall of the ring, and by increasing and making permanent the obliquity of the cord within its normal canal.

SYPHILIS AND ITS TREATMENT.

This paper was contributed by **Dr. C. T. Drennen**, of Hot Springs, Ark.

Dr. Henry O. Marcy, of Boston, followed with a paper on

SURGICAL TREATMENT OF HEMORRHOIDS.

This paper was in the nature of a reply to the strictures cast upon the Whitehead operation by Dr. Edmund Andrews, of Chicago, in a paper read before the last meeting of the Illinois State Medical Society. Dr. Marcy believes that if, in the statistics given by Dr. Andrews, the names of the operators were mentioned, most of the disastrous results would be found to have followed the work of incompetent men. His results have been excellent in those cases in which he has done the Whitehead operation, slightly modified by himself.

Dr. John Ridlon, of Chicago, read a paper on

CLUB-FOOT,

which he defined as a distortion of the foot in its relation to the leg. The simple and compound varieties of club-foot were dealt with.

VAGINAL CASTRATION.

This paper was read by **Dr. E. E. Tull**, of New York. The author claimed for this method a lower mortality, a shorter convalescence, and a wider adaptability, as it may be practised in cases too weak for abdominal section.

Dr. F. G. Groner, of Grand Rapids, Mich., read a paper on

A NEW PHASE OF CELIOTOMY.

He related a suit for malpractice which had just been terminated at Grand Rapids. The suit was commenced against a doctor some time ago, and was for fifty thousand dollars. The defendant died, but the court held that the cause of action survived, and that the suit could be brought against the estate. The jury returned a verdict for ten thousand dollars. The author claimed that he knew there was no malpractice, because he was interested in the case and knew just what was done in the operation. He found fault with the laws which permitted a suit against the doctor to survive his death and be a menace to the widow and children. The speaker thought that the next Legislature should remedy the law. He had the draft of a bill prepared, which he thought would remedy the present law, and which he read.

RESULTS OF FIVE YEARS' EXPERIENCE WITH INTRA-ABDOMINAL SHORTENING OF THE ROUND LIGAMENTS.

This paper was contributed by **Dr. J. Frank**, of Chicago. Since his last publication, November, 1893, he had had the opportunity of performing this operation seventeen times, with only one failure, and without any deaths. All of the seventeen cases operated upon were for retroversion, prolapsus, and retroversion with prolapsus of the uterus.

Dr. Theodore A. McGraw, of Detroit, delivered the Address on Surgery. He selected for his subject

THE PRESENT STATE OF OUR KNOWLEDGE OF CANCERS AND TUMORS.

He said that if we compare the ideas that prevailed relative to these diseases thirty years ago with those the profession hold to-day, we would find a change which marks rather by a clearer view of the nature of the problem than any actual gain in its solution. Before Virchow the subject of tumors and cancers was wrapped in the greatest confusion. Tumors were divided and classified in that era according to their clinical histories. They were divided into the innocent, which were looked upon as purely local, and the malignant, which were regarded as due to dyscrasiæ, the seat of which is in the blood. Under the influence of the new cellular pathology the faith in so-called dyscrasiæ was abandoned and supplanted by a new doctrine, which taught that tumors and cancers resulted ever and always from aberrations in cellular nutrition, development and growth. It may be said that during this time the energies of the profession, as far as tumors are concerned, have been confined almost solely to this channel. The most successful attempt to account for the origin of tumors and cancers was that of Cohnheim.

The arguments offered in defence of the parasitic theory of cancer are (1) the microscopic evidences; (2) the frequent occurrence of auto-inoculation, and the evidently infectious course of the disease in the organism; (3) the endemic occurrence of cancer in certain localities, and in rare instances in the same houses; (4) an occasional success in inoculating the disease in animals. The arguments against it are the many instances of hereditary tendency; the general failure of experiments of inoculation; and the fact that metastases occur, not through the transfer from one point to another of parasitic germs, as is usual in parasitic diseases, but by the transmigration of cells bearing the same characters as the cells of the original tumor, and the subsequent proliferation of the migrating cells; the fact that not only cancers but tumors of all kinds have a more or less tendency to produce metastases; the tendency exhibited by embryonic remains and hystoid tumors to develop into malignant disease.

Dr. McGraw closed by saying that physicians should be better instructed in the means of diagnosis and in the necessity of early operative treatment. And last, but not least, the laity could be induced to assist, not only by liberal contributions of means, but by that intelligent co-operation which would lessen our difficulty in collecting evidence and making post-mortems and keeping the sufferers out of the hands of the quacks.

DR. C. B. BURR, of Flint, Mich., read a paper on

THE PARANOIAC A MENACE TO SOCIETY.

He made brief and pointed reference to the numerous recent murders of prominent persons by so-called "cranks." What to do with these persons is one of the problems confronting our modern civilization, and is one demanding an answer from students of the subject. We have room enough in our asylums. The trouble is, harmless lunatics are kept in confinement while dangerous paranoiacs are allowed their liberty. These murders disturb the public but a day, and do not scare us into further provision for a safeguard. The public do not sincerely seek advice from professional sources in the matter. No one who has been threatened by a paranoiac would be willing to have his commitment settled by a jury without medical testimony as to the danger involved in granting freedom to such an individual. The paranoiac is a menace to society, and should be sequestrated. But doubtless the public will continue to view with indifference or approval now and then, the execution of a criminally insane person as sane enough to hang, and vainly hope for a deterrent effect of this example upon other deluded minds.

DR. HUGH T. PATRICK, of Chicago, called attention to the fact that the fixed illusions began as early in life as five or eight years, and then, in such cases measures of restraint should be instituted. These illusions are not always discovered, even by the family physician.

(*To be continued.*)

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Recent Literature.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume IV, Diseases of the Vascular System and Thyroid Gland. New York: William Wood & Co. 1895.

The contents of this, the fourth volume of the "Twentieth Century Practice," comprise a long article on Diseases of the Heart and Pericardium by Dr. James T. Whittaker, of Cincinnati; an article on Diseases of the Blood Vessels by Dr. Arthur Ernest Sanborn, of London; an article on Diseases of the Lymphatic Vessels by Dr. Bertrand Dawson, of London; and lastly, an article on Diseases of the Thyroid Gland, including Myxedema, Cretinism, Exophthalmic Goitre, Goitre, etc., by Dr. George R. Murray, Newcastle-on-Tyne. Of the writers, one is an American, and three are Englishmen. They are all well qualified to discuss with profit to the reader the subjects for which they have been selected.

Dr. Whittaker's article on Diseases of the Heart and Pericardium occupies 450 odd pages, or more than half of the volume, which with the index offers 841 pages. The ground is covered very fully, from an historical note of three pages at the beginning to a section of 72 pages at the end on Neuroses of the Heart, which closes with Angina Pectoris. In the pages on Paracentesis of the Pericardium we do not find any allusion to Rotch's investigations as to the point of predilection. Perhaps one would be less apt to notice an omission were this and the other topics of the general subject less fully treated.

Under the head of the treatment of Hypertrophy and Dilatation of the Heart, Oertel is casually referred to, and a diagram showing the elevation of the line of hepatic dulness and the retraction of the line of cardiac dulness under exercise, is credited to Schott. Something more might have been given of the details of the Nauheim System and of Oertel's Exercise Method. These receive two or three pages from Dr. Sanborn's pen in the section of his article on Aortic Atheroma. However, in a volume presenting different articles on kindred subjects, it is wise to avoid repetition, and some compression is very justifiable in so extensive a subject as that undertaken by Dr. Whittaker. Such comments are not intended to detract from the general merit of an article.

Dr. Murray was an excellent choice for the article on Diseases of the Thyroid Gland. His early association with the internal exhibition of the thyroid gland in myxedema, makes the subject one of especial personal interest to him, and he succeeds in making it clear and interesting to the reader, at least as far as present knowledge will permit of clearness. It was only as long ago as April, 1891, that Dr. Murray first tested the action by subcutaneous injection of a glycerine extract of a sheep's thyroid gland in a case of myxedema, and the profession is to-day giving thyroid extract in myxedema with the same ease and confidence in its specific effect, as it gives quinine in malaria. We are glad to note that, under the head of Diagnosis, Dr. Murray calls attention to the importance of early diagnosis in myxedema and to the fact that "slight evidences of the disease may be readily overlooked and the symptoms on the part of the nervous system, which may occur during the early stages, may be attributed to some other cause." These sentences might advantageously have been made even more emphatic. Dr. Murray has apparently had no personal experience with the extract of thyroid gland in exopthalmic goitre, and only quoted two instances of its use, one in a case by Owen and one by Mikulicz.

It is not improbable that in the next five years — or when a supplement to the "Twentieth Century of Practice" is required — even greater additions than in the last five years will have been made to our knowledge of the physiology and pathology of the so-called ductless glands, and to our success in treating these diseases.

The volumes of this encyclopedia succeed each other so far with remarkable promptness, though we suspect this is in a measure accomplished at the expense of a more rational grouping of subjects. The press-work is very good.

The Cell: Outlines of General Anatomy and Physiology. By DR. OSCAR HERTWIG, Berlin. Translated by M. CAMPBELL, and edited by HENRY JOHNSTONE CAMPBELL, M.D., pp. 368. London: Swan, Sonnenschein & Co. New York: Macmillan & Co. 1895.

The book before us is a translation into English of the first part of Hertwig's complete work, "The Cell and the Tissues," a fact, which the translator designates by entitling his volume merely "The Cell," of which it alone treats. The book in its original form has been before the public for two years; its translation, however, will no doubt introduce it to a larger number of readers than it could otherwise have.

Hertwig, in his preface, describes the object of his work in the following words: "What I have striven to do to the best of my ability is, to fix the scientific standpoint occupied at present by the doctrines of cell and tissue formation. Further, I have tried to delineate the historical course of the development of the more important theories. With regard to disputed points I have frequently compared various opinions."

These objects are well carried out in the discussion of the cell, which, as already stated, alone concerns the present volume. The nine chapters of which the book is composed treat of the following subjects. The first is introductory in character, and discusses at some length the history of the cell theory. The second treats of the chemico-physical and morphological properties of the cell, with details regarding the properties of protoplasm and nucleus. Chapters three to seven, inclusive, are taken up with the vital phenomena of the cell, including in order the phenomena of movement, of stimulation, of metabolism and formative activity, of reproduction by division, and of the phenomena and methods of fertilization. Chapter eight concerns itself with metabolic changes occurring between protoplasm, nucleus and cell products; and chapter nine, the last, with the cell as the elementary germ of an organism, and theories of heredity.

When all is excellent, it is difficult to select anything for special comment. The constant appeal to the historical development of the matter under discussion, with a summary of diverse opinions relating to any disputed point is most helpful to the student of mature mind as well as to him of less knowledge and experience. In short, the book from beginning to end commends itself to any one desirous of having a fair and comparatively full statement of our present knowledge on the subject treated. The final chapter on heredity is an excellent review of the various theories which have prevailed up to the present time. Weismann has his share of credit and criticism, the author finally remarking, "I cannot see that this theory of Weismann's is of any great use, since it leads to so many difficulties which appear to be entirely superfluous." A good bibliography follows each chapter, which, as the editor states, has in certain instances been embellished by references of special value to the English student. An omission for which we can find no explanation is the name of Prof. C. S. Minot.

The book is admirably printed and carefully proofread. The cuts are well reproduced. The binding is unnecessarily weak, and ill-adapted for text-book use.

We shall await with interest the second part (on *The Tissues*) of the complete work.

Handatlas der Anatomie der Menschen. In 750 theils farbigen Abbildungen mit Text. VON WERNER SPALTEHOLZ a. o. Professor an der Universität Leipzig. Ernste Abtheilung: Figs. 1–227. Leipzig: Verlag von S. Hirzel. 1895.

The substance of the above, translated for those who do not read German, is that we have here the first part of an atlas of human anatomy with a text, by Professor Spalteholz, to contain 750 illustrations, some of which are colored. The part before us treats of the bones and of a part of the joints, with 227 illustrations. We are glad to begin by saying that the work is a most creditable one. The author states that the text was put in against his original intention, and does not in the least claim for it to be that of a text-book. So far as we have read it, we have found nothing to criticize. Our attention has been given almost solely to the illustrations, which are the purpose of the work. They are mostly made by a combination of photography and etching, if we are not in error, and are certainly very beautiful. They are accurate and artistic. The author, moreover, shows himself a thorough anatomist. There are two parts more to appear, the next one being promised for spring.

Elementary Technique in Histology and Bacteriology. by ERNEST B. HOAG and H. KAHN. Chicago: E. H. Colegrove & Co. 1895.

This is a small book designed as a laboratory guide for beginners in histology and bacteriology. The histological part is fairly good, and contains hints on methods which even the specialist will appreciate. The bacteriological part is distinctly inferior, showing evidence of hasty preparation, and an imperfect acquaintance with the more modern methods of bacteriology. Some of the methods given are antiquated or unusual, while some important improvements in technique, such as Mallory's rapid method of preparing blood-serum for diphtheria cultures, now so generally used in this country, receive no mention.

There is great need of a satisfactory book on this subject, but that book has not yet been published.

Materia Medica and Therapeutics. A practical Treatise with Especial Reference to the Clinical Application of Drugs. By JOHN V. SHOEMAKER, A.M., M.D., LL.D., Professor of Materia Medica, Pharmacology, Therapeutics and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia; Physician to the Medico-Chirurgical Hospital, Philadelphia, etc. Third edition, thoroughly revised. Royal octavo, pp. ix, 1108. Philadelphia: The F. A. Davis Co.

The third edition of this work, which has been adapted to the U. S. Pharmacopœia of 1890, now appears in one large volume; it includes the newer preparations such as tannigen and formalin, as well as a short account of the use of animal extracts. This edition is an improvement on the previous one; but among the many works on these important subjects there are others which will be found better suited to the needs of students and practitioners.

Surgical Nursing. By BERTHA M. VOSWINKEL, Graduate of Episcopal Hospital, Philadelphia; Nurse in Charge of Children's Hospital, Columbus, O. With 111 illustrations. Philadelphia: P. Blakiston, Son & Co. 1895.

This little manual is an excellent practical treatise on the subject to which it is devoted, and aims, as its preface says, to furnish just such knowledge of surgical principles as will enable the nurse to pursue her work intelligently, particularly in the matters of asepsis and antisepsis, in which the intelligent co operation of the nurse with the surgeon is of so great importance. Special chapters are also devoted to gynecological nursing, hemorrhages, splints and braces, dressings, bandages, and nursing in special cases.

Such a book ought to be useful to nurses as collateral reading in connection with the lectures on surgical nursing given in the training-schools.

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283 Washington Street, Boston, Mass.

THE PHYSICAL EFFECTS OF PAIN.

Paulo Mantegazza has made some researches on the physiology of pain, which though not altogether new, are yet of great importance, and to which Charles Richet has called attention in *L'Homme et l'Intelligence.*

If you excite, by pinching the skin, by electrifying the nerve trunks, the sensibility of a hare, a dog, or a guinea-pig, so as to cause the animal to feel pain, certain phenomena will be invariably witnessed.

(1) The temperature falls. In the hare this diminution varies from 0.68 to 2.48; an average of 1.27. This fall begins at once, but does not attain its maximum till ten to twenty minutes after the pain has ceased. The fall in temperature may last an hour and a half and even longer. Mantegazza attributes this diminution of temperature to contraction of the blood-vessels of the periphery. Heidenhain has verified the same fact, and has shown that the excitation of a sensory nerve lowers the temperature by an average of 0.2 per minute.

The pain acts on the movements of the heart. When intense, it may slow the heart's action to the point of producing syncope. In general, pain diminishes the frequency of the cardiac pulsations. In frogs by faradizing strongly a sensory nerve, the heart's rhythm is slowed. This slowing is also observed when the encephalon is removed. In the hare, the rat, the hen, painful excitations have the same effect, and one can measure with very great precision the intensity of the pain by the diminution in the frequency of the heart's beats. In animals rendered insensible by anesthetics, the excitation of sensory nerves no longer reacts on the heart. Section of the spinal cord abolishes completely the influence exercised on the heart by the excitation of the peripheral sensory nerves; hence it would seem that the excitation goes to the encephalon by the cord rather than by the great sympathetic. In man, although there is sometimes diminution, sometimes augmentation in the frequency of the movements of the heart, there is always, under the influence of great pain, a modification of the cardiac rhythm and a change in the form of the pulse appreciable to the sphygmograph, and due, probably, to augmentation of blood pressure in the arteries.

(3) The pain augments the frequency of the respiratory movements. Sometimes, however, a violent pain suppresses and arrests these movements. Often the rhythm becomes irregular, the movements being now rapid, now slow, and the inspirations successively short and deep. There is a diminution in the quantity of carbonic acid exhaled, which seems due less to a change of rhythm than to a real slowing of the interstitial combustions.

(4) Pain diminishes the appetite, retards gastric digestion, and disturbs it to the point of provoking vomitings and diarrhea. It acts on the general nutrition disastrously, and in the end causes extreme debility in the animal. When very intense, it arrests the secretions; when moderate, diminishes them.

Charles Richet, in accepting, as proved, the above facts, asks if these phenomena are due to the pain itself, or if they may be due to the fact that the pain, instead of being the cause of the slowing of the heart, is but an effect of the same agency which produces this, namely, the excitation of the spinal cord and vagus nerve.

An appeal to experimentation, namely, observation of the effects on animals deprived of the cerebrum (that is, of the pain centres), of excitation of the sciatic nerve, seems to have settled the question by making the last hypothesis certain. The heart is still slowed, the respiration accelerated, etc., though perception of pain is suppressed. It would appear then that the contraction of the peripheral vessels (excitation of the vaso-constrictors), and the slowing of the heart (excitation of the pneumogastric) are to be regarded as reflex acts due to medullary excitation, and not to painful excitation of the cerebrum.

On the other hand, the same effects may be produced by reflexes starting in the cerebrum, for a *moral* pain, without any excitation of spinal sensory nerves, produces slowing of the heart (even to syncope sometimes) and at the same time a contraction of the peripheral cutaneous vessels as manifested by the pallor of the integuments and the lowering of the temperature of the skin. This result is likewise brought about by excitation of the bulb and cord.

The effects produced by anesthetics are peculiar in that quantities sufficient to suppress pain also suppress, or greatly diminish reflex action by their simultaneous influence on the cord and encephalon.

As for the cause of pain, Richet lays down the following law, which is in accordance with the views of most physiologists who have studied the subject. "Pain is an intense and prolonged vibration of the conscious nerve centres; it is the resultant (when not arising from encephalic central causes) of a strong peripheral excitation, and consequently of a change of state in the cortical conscious centres." Pain is teleologically the warning that a noxa exists, and prompts to actions of self-preservation. The chief end and aim, says Richet, of the natural forces represented by living beings is the greatest sum of life possible. From this point of view, pain has an important rôle. "Hunger, thirst, fatigue, disgust, are only forms of pain, and pain is the more intense the more intelligent the animal; in a word, there is between intelligence and pain so strict a relation that the most intelligent animals are those which are capable of suffering the most."

In general agreement with the above conclusions are the special investigations of Mr. Marshall as recorded in a former number of the *Journal of Nervous and Mental Disease.* Neurologists, he says, substantially, are wasting valuable labor in the search for "pain paths" and for "pain localization" in the cortex of the brain; the paths in the spinal cord and the supposed nerve terminals which have attracted the attention of investigators are only the media of some form of sensibility, which under the conditions of examination manifests itself by pain. For surely, if pain and pleasure are qualities of all elements of consciousness (as seems in accordance with good evidence) we are not to look for any special organs or centres for pain and pleasure, but we must account for these states by a certain intensity of stimulus, as Spencer and Bain have taught.[1]

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TRAUMATISM AS A CAUSE OF TUBERCULAR MENINGITIS.

IMMEDIATELY after Koch's discovering of the tubercle bacillus, this bacillus was believed to be the sole cause of tuberculosis. Nothing more was heard for a time of the time-honored dictum of the causation of tuberculosis by traumatism, and yet an understanding of this subject, which since Schüller's instructive experiments is possible for every physician, is important, not only for the surgeons and consulting physicians, but also for those who practise internal medicine or give expert medical testimony. From Schüller's investigations we learn that in animals who have been infected with tuberculosis, an injury to a joint will determine a tubercular affection of the joint in question.

Before the discovery of the tubercle bacillus, traumatism was believed to play the most important part in the etiology of tuberculosis. Now, after Koch's discovery and Schüller's experiments, we are able to assign to both trauma and the tubercle bacillus their true etiological value. Guder has laboriously collected the literature of the subject of the relation between trauma and tuberculosis. König says: "Tuberculosis of the bones and joints occurs most frequently in patients who already have tuberculosis elsewhere." Traumatic tuberculosis is therefore really metastatic, the metastasis to the particular point attacked is determined by the traumatism. In the rare cases in which the bones and joints are attacked primarily, the bacillus must be held to have invaded the system through the respiratory or digestive tract, which tracts themselves do not necessarily show any evidence of tubercular disease (Krause). Kaufmann, in his handbook, says: "There is found in the cases of the development of tuberculosis of the bones and joints in direct sequence upon an injury, a continuous connection between the injury and the fully developed disease, demonstrable through the failure of anatomical or functional recovery, and the slow gradual development of severe symptoms.

The occurrence of primary tuberculosis of the lungs in persons previously healthy, as a result of traumatism of the thorax, has been almost established as a result of the clinical observations of Mendelsohn.

The fact that as a result of injury to soft parts, bones or joints without solution of continuity other pathogenic bacteria than the tubercle bacillus may become localized at the injured point is well known. We need only to recall the development of abscess in the soft parts, osteo-myelitis, and in the lungs pneumonia from contusions.

But not merely do the minute forms of life known as pathogenic bacteria become the cause of localized inflammatory process in the bones and joints after traumatism, but the *locus minoris resistentiæ* produced by the injury may be sought out by chemical agents circulating in the blood, (uric acid and its salts). It is frequently possible to prophecy correctly in patients of gouty diathesis who have suffered a sprain or other injury of a joint or fracture of a bone, that the gout will attack them at the injured point.

With regard to the relation of meningeal tuberculosis to injuries of the skull but little is to be found in literature.

Most text-books of children's diseases deny any connection between meningeal tuberculosis and trauma. Henoch writes: "The assumption of a traumatic origin, such as a fall on the head, to which parents are prone, is under these conditions, as a rule, deceptive, and has for its foundation generally a mere chance association."

Huguenin says, on the contrary, that trauma often stands in undeniably evident causal relation to meningeal tuberculosis; and Niemeyer-Seitz affirms that in persons in whom latent foci of tuberculosis are present, it is very probable that external injuries, falls on the head, etc., may become the determining cause of tubercular meningitis.

In an interesting article by Schilling[1] to which we are indebted for most of the citations given above, six cases are cited (Hilbert 1, Mendelsohn 2, Demone 3, Salis 1,) in which there was an evident relation between falls and blows upon the head and the development of tubercular meningitis. Schilling then gives a careful and interesting clinical account of a case in which a fall on the head from a height of four metres was followed, after eleven days had elapsed and complete recovery from the immediate effects of the blow had ensued, by a fatal attack of tubercular meningitis. Death took place in twelve weeks, and at the autopsy meningeal tuberculosis was found, together with tubercular peri-bronchial glands, some of them cheesy in the centre. Schilling thinks that bacilli previously encapsulated in these glands were set free by the shock of the fall into the blood or lymphatic channels, and localized at the point of the injury to the head.

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[1] Journal Nervous and Mental Disease, February, 1894, p. 71; Spencer's Principles of Psychology, vol. i, p. 288.

[1] Münchener med. Woch., November, 1895.

According to Koch and Baumgarten ten to twelve days are required for the development of a tubercular focus, which evidently just corresponds with the elapsed time in the case reported. Schilling justly remarks that in those cases in which the onset of the symptoms takes place one or two days after the trauma, the tuberculosis must have antedated the injury.

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A DOUBTER ON SERO-THERAPHY IN DIPHTHERIA.

An editorial appears in the *Journal of the American Medical Association* for December 14th, endorsing Mr. Lennox Browne's attitude of opposition to the employment of antitoxin in the treatment of diphtheria. The same gentleman's arguments against the use of the serum for immunization are also quoted, and receive the stamp of editorial approval, although they have a purely theoretical basis. The argument against the use of antitoxin as a curative agent consists in the statement that under its use the mortality from diphtheria in a certain London hospital has failed to diminish.

We are surprised to learn of the acquiescence of our esteemed contemporary in so pessimistic a view of the value of the antitoxin, especially when the experience on which this view is based is so extremely limited, and is directly at variance with that of nearly every institution in which antitoxin has had a fair trial throughout the civilized world.

The experience with sero-theraphy in the Contagious Department of the Boston City Hospital, where patients have had all the advantages of most careful hospital treatment, both before and after the adoption of the antitoxin treatment, has shown that since the beginning of the treatment there has been a surprising increase in the comfort of the patients, and an equally remarkable decrease in the mortality.

An acquaintance with the danger and difficulty of too enthusiastic local treatment in this disease renders it difficult for us to attribute any very high value to the advice given by the editor in his closing sentence, "to adopt more stringent precautionary measures, more active local methods, and wait!"

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MEDICAL NOTES.

The Sixth International Congress of Otology wi llbe held in London, in 1899.

The International Congress of Applied Chemistry is to meet in Paris next year. There will be medical, pharmaceutical and hygienic sections, and an exhibition will be held in the Palais de l'Industrie.

Professor Riedel, of Jena, has been elected to the Chair of Surgery at Göttingen in succession to Prof. König.

The Presbyterian Hospital, New York, in Debt. — It is reported that the expenses of the Presbyterian Hospital during the past year exceeded its receipts by $97,625.71, and the usual appeal for donations is in order.

Why not Renovate the Baths of Caracalla? — In his address at the opening of the University of Rome, Professor Celli made the astonishing statement that the capital of Italy did not possess a single public bathing establishment.

Nephrectomy for Injury. — At a recent meeting of the Medical Society of London, says the *Medical Press and Circular*, Mr. Swinford Edwards reported a case in which he had performed "Nephrectomy for Injury." The patient, a man, aged fifty-five, had fallen out of a third-story window on to some railings, which had inflicted a formidable wound in the lumbar region smashing a couple of ribs and severely lacerating the kidney, which was bleeding profusely. He could not have been very hopeful at the time of operation, but he proceeded to clean the wound, and arrested the hemorrhage by ligaturing and removing the damaged kidney. There was a little suppuration, with some temperature; but the patient ultimately made a splendid recovery, and was present to tell the tale.

The Bible as a Carrier of Infection. — An amusing incident is reported in the *Lancet* as occurring recently in a Sussex Police Court. The Rector of Graffham and East Lavington, the Rev. Rowley Lascelles, was concerned as a witness in a trespass case which was heard recently before the Petworth magistrates, Major Sir Walter G. Barttelot, Bart., being in the chair. Mr. Lascelles asked to be sworn in the Scotch fashion, whereupon the following colloquy ensued:

> *The Chairman.*— I should like to know, Mr. Lascelles, why you, being a clergyman of the Church of England, object to kiss the Book?
>
> *The Rev. R. Lascelles.*— I have a strong objection to kissing the Book in these days of infectious diseases. I should be happy to kiss it if I may turn it inside out.

This was done, and Mr. Lascelles having been sworn in the usual fashion the chairman went out of his way to remark in an undertone: "He is afraid of catching an infectious disease from the Bible." A later witness when he was sworn, piously remarked: "Although I am only a layman, I am not afraid of catching infectious diseases from the word of God." The *Lancet* suggests that if certain combinations of words and letters are a safeguard against contagion, we would better drop isolation and return to the use of phylactives. The pious gentlemen who thought the parson showed a want of faith, would probably have been themselves unwilling to kiss a French novel in an equally filthy condition, but the idea of contagion being carried by a Bible! How preposterous!

NEW ENGLAND.

Acute Infectious Diseases in Boston. — During week ending at noon, December 18, 1895, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 144, scarlet fever 20, measles 11, typhoid fever 15.

Typhoid Fever in Connecticut. — The report of the Connecticut Board of Health for October shows an unusual prevalence of typhoid fever in the State. Out of 168 towns in the State, the disease is recorded in 50, the total number of cases reported being 189.

NEW YORK.

Society of Medical Jurisprudence. — At the annual meeting of the Society of Medical Jurisprudence held December 9th, the following officers were elected: President, Edward M. Brush; Vice-President, S. B. Livingston; Treasurer, D. McLean Shaw; Secretaries, John C. West, W. H. Bates and R. Safford Newton. Wm. D. Purrington, Esq., read a paper on the law of libel as affecting the medical profession.

Another Centenarian. — Mrs. Maria Halsey, who was born and passed most of her life in New York City, died at her home in Hanover, N. J., on December 8th, at the age of 102, and it is said that she retained her faculties to the last in a remarkable degree. It is very rare for a native of New York to attain such an advanced age.

Diphtheria Prevalent. — Diphtheria is now unusually prevalent both in New York and Brooklyn. During the week ending December 14th in New York there were reported 36 deaths, against 22 in the week previous. In Brooklyn the disease has acquired somewhat serious proportions. In the week ending December 14th there were reported 160 new cases and 46 deaths, an increase of 15 in the mortality from it. The propriety of closing the public schools has been discussed by the Health Department, but, while a careful supervision of the schools is maintained, this step has not as yet been regarded as necessary.

Mortality. — In New York the general mortality of the city shows some increase, due, no doubt, to a considerable degree, to the cold weather that prevailed last week. During the week the number of deaths reported was 706, an increase of 65 over the week ending December 7th. Still, even this mortality shows a remarkably good state of the public health, as the number of deaths is about one hundred below the average for this season; the average for the corresponding weeks of the past five years being 805. The number of deaths from pneumonia increased from 103 in the previous week to 111, and there was about the same increase in the mortality from phthisis. The mortality from measles was also comparatively large, 15; but, on the other hand, there was only six deaths each from scarlet fever and typhoid fever, and one from cerebro-spinal meningitis.

Miscellany.

THE HAIR TURNING FROM WHITE TO BLACK AFTER EXPOSURE TO SEVERE COLD.

"On the 5th of January, 1895, we had a tremendous fire in Louisville," writes Dr. George W. Griffiths, in the *Journal of Cutaneous and Genito-Urinary Diseases*, for September, 1895; "the night was very cold, and the streets were covered with snow and ice. The gentleman I shall present as the subject of these remarks is an engineer in the Louisville Fire Department, aged sixty-five years, who was on duty from eleven o'clock on the night of the 5th of January until two o'clock of the following day, except when he was taken away overcome by sheer exhaustion, and sent by my friend, Dr. Marshall, in a carriage to his home, where he remained two or three hours, and again returned to duty. Two or three sections of hose were leaking near his engine, and the spray was blown by a strong north wind until he was covered from head to foot with ice, which became so thick that it had to be cut or broken off from his clothing. This man was constantly at his engine, exposed to the north wind, which was carrying the spray of water from the broken hose. The top of his head was the warmest part of the body; his eyebrows and whiskers became wet, and were frozen stiff. He had a red skull-cap over his head, and his helmet on top of that; his head was not exposed at all, nor any hair, except the eyebrows and whiskers.

"I saw him the next day, when he had a very feeble pulse, and was much exhausted and worn out. He has not been in robust health for some time. The next afternoon after the exposure to the severe cold, as I have indicated, his hair turned black; and the wonder becomes greater when we consider that his hair was perfectly white before. He has been gray for eight years, and for the past three years perfectly white; before that he was blonde. Now his hair is black. I have known this gentleman for over forty years. The hair is oily, and does not seem to be dead at all. His head has been very carefully scrubbed several times, as I was inclined at first to think the change in color was caused by cinders or other foreign matter; but such did not prove to be the case."

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LIONS AND LAVENDER WATER.[1]

A WIDELY-SPREAD statement has been brought under our notice to the effect that though music has no charm for the lion and tiger, it has been discovered by a naturalist who has been conducting experiments in the Zoölogical Gardens that these animals are powerfully affected by the smell of lavender water; under its influence they become as docile as lambs. We have communicated with Mr. A. D. Bartlett, the superintendent of the Zoölogical Society's Gardens, on the subject generally, who writes us: "I am frequently amused by the funny notions and sometimes silly ideas of persons who talk and write about animals. The strange fads and mistakes they circulate are very curious; one of the fads is music, another perfumes. Now most animals have ears and nostrils, and use them, and doubtless are pleased or displeased with certain sounds or perfumes; for instance, all the cat family appear pleased with various perfumes, such as valerian, musk, lavender, and many others; it does not appear to me that there is anything very extraordinary in this. With reference to music, I live in fear that some one should state that our animals were charmed by the sound of the Jew's-harp, or, worse still, the bagpipes, and that some kind friend might provide the keepers with a stock of these musical instruments to play in their leisure hours."

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[1] British Medical Journal.

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THE SUN-GLASS AS A SURGICAL INSTRUMENT.

In an article under this title in the *Yale Medical Journal* for December, Dr. George R. Shepherd advocates the burning-glass as an ideal method for the removal of small nevi, moles and warts. Local anesthesia is established by cocainization, the surrounding parts are protected by moist blotting paper, and the solar rays concentrated upon the growth. Dr. Shepherd claims that this method is superior to the electric needle or fine cautery point, as no scar is produced. In describing the application of the method, however, he says that "if the growth dips into or through the corium, care must be taken not to injure the subcutaneous tissues, if a scar is to be avoided." It would seem that if this precaution is necessary, the superiority of the sun's rays to the other methods of cauterization is a matter of doubt, for the electric needle or fine Paquelin point will not cause scarring in the rare cases in which it is not necessary to penetrate into the subcutaneous tissues.

The difficulty of applying the sun's rays as a cautery must certainly be great in general practice. It is not always convenient to wait for fair weather before operating, nor easy to secure a suitable operating-room.

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A FAMILY TENDENCY TO TWINS.

Dr. Donald McPhail, of Glasgow, writes to the *Lancet* as follows:

"I attended a woman in her confinement when twin girls were born. It was her fifth confinement, but she had not had twins before, though she said 'twins were very rife in her family.' Her insistence upon the 'rifeness' of twins aroused my interest in the matter, and she kindly arranged for me an interview with an old aunt, who gave me the notes I send and said she thought she could get notes of other cases in the family and fuller notes of the cases she mentioned to me. My patient died from phthisis not long afterwards and her husband married again and left the district, so that the history remains as I first noted it down, probably incomplete. I could get no genealogical facts on the husband's side, though he had won honorable mention by the fact that his first wife's only two children were a pair of twins. His third wife had but one child to my knowledge, but of her subsequent history I know nothing. The facts of the case are that my patient's husband's first wife had twins, her maternal grandmother had twins twice, her grandmother's brother's wife had twins, her grandmother's mother had twins, her grandmother's uncle's wife had twins, her grandmother's father was a twin, and his sister had twins twice and triplets once. Arranged according to generations the history seems to be as follows:

"First generation. A woman had twins, etc.

"Second generation. One of her daughters had twins twice and triplets once, and one of her twin sons married a woman whose brother's wife had twins, and who herself presented *him* with a pair.

"Third generation. One of *his* daughters had twins twice, and his son's wife had twins once.

"Fourth generation. Blank.

"Fifth generation. A granddaughter of the woman noted in the third generation married a widower whose first wife had had twins and she herself bore him twins."

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PREHISTORIC TREPHINING IN RUSSIA.

An article by General von Krahmer, in the *Globus*, Bd. LXVII., No. 11, describing an amulet obtained in 1883 from a neolithic burial in Russia, is commented upon by Dr. D. G. Brinton, in *Science*. It was of bone, and on examination proved to have been taken from a human skull. Ten years later the archeologist Bieljachewski, in exploring a deposit on the banks of the Dnieper, exhumed a human skull from which just such a fragment must have been removed. Careful inspection showed that the trepanation had been performed after death, the spot selected being the right frontal bone. The instrument must have had a sharp cutting edge, but a lack of skill is manifested in the use of it. The skull belonged to a comparatively young person, probably a woman. From objects collected in its immediate vicinity, it may be assigned to the twelfth century.

Such examples are extremely rare in Russia. Among the crania at the anthropological museum in Moscow there is but one which shows ancient trepanation; but it is catalogued as from the Caucasus. However, the evidence brought forward by General von Krahmer, showing that this operation was occasionally practised in order to obtain amulets from the parietes of the skull, is valuable as illustrating a primitive superstition which prevailed in several widely separated tribes.

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Correspondence.

SACCHARUM ALBUM AS AN OXYTOCIC.

Boston, December 16, 1895.

Mr. Editor: — The *North American Practitioner* notes the fact that sugar is a valuable aid in hurrying up the action of the lazy uterus in lingering cases. Formerly I gave ergot, but it has grave faults. I have more recently used ginger, quinine and other agents; but it has never occurred to me to employ sugar for this purpose. Rossi, however, has given it in ounce doses, and reports excellent results. According to him the ecbolic action begins in twenty to forty minutes. The contractions are free from tetanic tendencies and hold regularly and continuously on till the case ends, though in some instances it is necessary to repeat the dose.

Certainly it would be a great boon if wider experience should demonstrate this to be a reliable agent for these tedious cases. I hope physicians will give it a trial and report, since its administration can do no harm, which unfortunately cannot be said of ergot. Rossi gave an ounce in a cupful of water. Yours truly, E. Chenery, M.D.

METEOROLOGICAL RECORD,

For the week ending December 7th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...1	30.31	32	43	22	67	81	74	N.W.	S.	6	9	F.	O.	.00
M...2	29.61	52	60	43	79	88	84	S.	S.W.	21	12	O.	O.	.16
T...3	29.84	32	38	27	82	76	79	N.W.	N.W.	20	12	C.	C.	.00
W...4	30.08	23	30	16	59	70	64	N.W.	N.	9	10	C.	C.	.00
T...5	29.87	25	28	22	84	88	86	N.	N.W.	20	15	N.	N.	.42
F...6	30.01	26	30	23	63	61	62	N.W.	W.	18	10	O.	C.	.18
S...7	30.04	22	43	20	62	74	68	S.	S.W.	6	12	O.	O.	.00
☛														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☛ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, December 7, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,892,332	641	253	30.95	21.90	.90	1.05	4.50
Chicago	1,678,967	424	138	19.92	11.28	2.64	3.36	9.12
Philadelphia	1,164,000	414	145	13.20	11.28	1.44	1.92	9.60
Brooklyn	1,100,000	400	150	14.75	14.25	.20	.10	1.00
St. Louis	560,000	—	—	—	—	—	—	—
Boston	494,205	185	45	13.50	12.42	.54	1.08	10.80
Baltimore	496,315	187	70	12.72	13.78	.53	1.06	9.54
Cincinnati	336,000	110	27	10.00	7.27	.90	5.45	3.63
Cleveland	314,537	85	24	12.87	12.87	1.17	1.17	9.36
Washington	275,500	86	28	12.76	12.76	2.32	2.32	4.64
Pittsburg	238,617	88	30	14.82	14.82	2.28	9.12	3.42
Milwaukee	265,000	—	—	—	—	—	—	—
Nashville	87,754	30	7	6.06	18.18	—	3.03	3.03
Charleston	65,165	19	9	—	15.78	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	98,687	28	10	7.14	14.28	3.57	—	3.57
Fall River	88,020	36	17	16.68	8.34	8.34	—	—
Lowell	84,359	33	15	18.18	18.18	6.06	3.03	9.09
Cambridge	81,519	22	7	22.75	—	—	—	22.75
Lynn	62.335	13	4	13.94	6.97	—	—	6.97
New Bedford	55,254	15	9	13.33	13.33	—	—	13.33
Springfield	51,534	25	6	16.00	4.00	4.00	—	8.00
Lawrence	52,153	9	1	11.11	11.11	11.11	—	—
Holyoke	40,149	—	—	—	—	—	—	—
Salem	34,437	10	2	10.00	10.00	10.00	—	—
Brockton	33,157	6	1	—	33.33	—	—	—
Haverhill	30,185	9	1	11.11	11.11	—	—	—
Malden	29,706	13	1	20.91	20.91	—	6.97	13.94
Chelsea	31,295	9	1	11.11	—	—	—	11.11
Fitchburg	26,394	1	1	—	—	—	—	—
Newton	27,022	7	3	14.28	14.28	—	—	14.28
Gloucester	27,663	—	—	—	—	—	—	—
Taunton	27,093	9	2	—	—	—	—	—
Waltham	20,877	4	1	—	25.00	—	—	—
Quincy	20,712	3	1	—	33.33	—	—	—
Pittsfield	20,447	6	1	16.66	—	—	—	16.66
Everett	18,578	4	2	25.00	—	—	—	—
Northampton	16,738	5	1	—	20.00	—	—	—
Newburyport	14,554	6	1	16.66	16.66	—	—	16.66
Amesbury	10,920	—	—	—	—	—	—	—

Deaths reported 2,940; under five years of age 1,039; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 431, acute lung diseases 442, consumption 343, diphtheria and croup 243, typhoid fever 64, diarrheal diseases 45, measles 32, whooping-cough 20, scarlet fever 13, cerebro-spinal meningitis 7, malarial fever 5, erysipelas 2.

From measles New York 16, Brooklyn 8, Chicago 4, Baltimore 3, Philadelphia 1. From whooping-cough New York 10, Brooklyn 7, Chicago, Philadelphia and Boston 1 each. From scarlet fever New York, Chicago and Fall River 3 each, Providence, Lynn, Springfield and Haverhill 1 each. From cerebro-spinal meningitis Chicago 3, Philadelphia, Cleveland, Washington and Providence 1 each. From malarial fever Washington 4, Cleveland 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 7, 1895, TO DECEMBER 13, 1895.

Captain William P. Kendell, assistant surgeon, upon the expiration of his present leave of absence, is ordered to Fort Sam Houston, Texas, for duty.

First-Lieut. John S. Kulp, assistant surgeon, will, upon the expiration of his present leave of absence be relieved from duty at Fort Spokane, Washington, and ordered to Fort Walla Walla, Washington, for duty.

The leave of absence granted **Captain William B. Banister**, assistant surgeon, is extended one month.

The leave of absence granted **First-Lieut. James M. Kennedy**, assistant surgeon, is extended two months.

Captain Charles E. Woodruff, assistant surgeon, now on leave of absence is ordered to proceed from Washington, D. C., to Fort Snelling, Minn., and report for temporary duty without delay.

Major Richard S. Vickery, surgeon, is retired from active service this date, December 7, 1895.

Captain Freeman V. Walker, assistant surgeon, is, by direction of the president, wholly retired from the service this date, December 4, 1895.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 14, 1895.

G. T. Smith, passed assistant surgeon, detached from the "Ranger" and ordered to the "Adams."

M. K. Johnson, assistant surgeon, ordered to the Naval Laboratory and Department of Instruction, New York.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING NOVEMBER 30, 1895.

Fessenden, C. S. D., surgeon. Placed on waiting orders. November 22, 1895.

Mead, F. W., surgeon. Granted leave of absence for thirty days. November 21, 1895.

McIntosh, W. P., passed assistant surgeon. To proceed from Boston, Mass., to Portland, Me., for temporary duty. November 25, 1895.

Pettus, W. J., passed assistant surgeon. Relieved from duty at Buffalo, N. Y., and directed to proceed to Cape Charles Quarantine and assume command of station. November 16, 1895.

Magruder, G. M., passed assistant surgeon. Granted leave of absence for thirty days. November 20, 1895.

Perry, T. B., passed assistant surgeon. Relieved from command Cape Charles Quarantine and directed to proceed to Buffalo, N. Y., and assume command of service. November 16, 1895.

Stimpson, W. G., passed assistant surgeon. Granted leave of absence for thirty days. November 20, 1895.

Cofer, L. E., assistant surgeon. Placed on waiting orders from December 1, 1895. November 21, 1895.

Nydegger, J. A., assistant surgeon. When relieved from temporary duty at Mobile, Ala., to rejoin his station at Savannah, Ga. November 27, 1895.

Stewart, W. J. S., assistant surgeon. Granted leave of absence for fourteen days. November 29, 1895.

Sprague, E. K., assistant surgeon. Relieved from temporary duty at Key West Quarantine and directed to rejoin his station at Mobile, Ala. November 27, 1895.

Prochazka, Emil, assistant surgeon. To proceed from Detroit, Mich., to Buffalo, N. Y., for temporary duty. November 16, 1895.

Green, J. B., assistant surgeon. Granted leave of absence for thirty days. November 20, 1895.

HARVARD MEDICAL SCHOOL.

Evening Lectures.

The next lecture will be given on Thursday evening, December 26th, at 8 p. m., by Dr. J. H. McCollom. Subject: "The Relation of Bacteriology to Preventive Medicine." The profession are invited.

BOOKS AND PAMPHLETS RECEIVED.

The Medical Record Visiting-List and Physicians' Diary for 1896. New revised edition with calendar, tables of doses, etc. New York: William Wood & Co. 1895.

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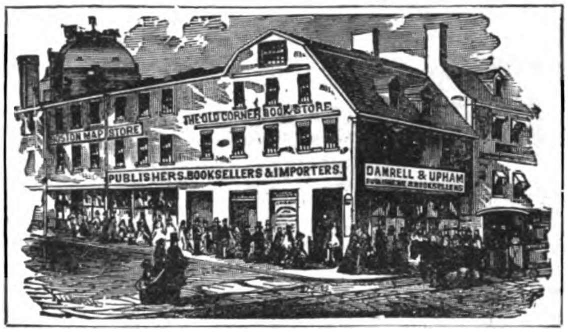
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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum........................ 19
Anheuser-Busch Brewing Association........ 5
Antikamnia Chemical Company...Antikamnia 22
Armour & Co............The Armour Laboratory 14
Ayer's Hygienic Coffee........................ 23
Baker, L. W., M.D.... ....Riverview 19
Baker, Dr. W. H..............................Card 19
Battle & Co. ....Bromidia 30
Bellevue Hosp. Med. Col..... Sessions of '94-95 19
B. H. R. Distilling Co........................ 29
Borine Chemical Co.........................24, 25
Bowdoin College...........Medical Department 16
Bowker, Dr. E. M........... ......Vaccine Virus 18
Boylston Medical Prize Questions............ 2
Breitenbach Co., M. J...........Pepto-Mangan 4
Channing, Dr. Walter........................ 11
Chauncy Hall School.......................... 39
Cocke, Dr. James R........................... 19
Codman & Shurtleff......Surgical Instruments 10
Coll. of Physicians and Surgeons, Boston... 16
Crittenton, C. N..................Vinolia Soap 20
Cutter, Dr. W. P 19
Dartmouth College, N. H....Med. Department 16
Dios Chemical Co............................. 3
Doliber-Goodale Co...............Mellin's Food 1
Drevet Co..............................Glycozone 15
Edes, Dr. R. T................................ 19
Fairchild Bros. & Foster.........Milk Mixture 7
Feeble-Minded Youth, Inst. for..Barre, Mass. 19
Fehr, Dr. J......................Baby Powder, etc. 5
Fellows, James I. ....Hypophosphites 6
Fisk & Arnold...................Artificial Limbs 18
Flood, Dr. Everett............................ 19
Fougera, E. & Co............Imp'g Pharmacists 9, 27
Gear, J. Frank............Surgical Instruments 17
Goldthwaite, Dr. S. V......................... 19
Goode, T. F..................Buffalo Lithia Water 13
Graham, Dr. Douglas......Treatise on Massage 26
Greene, Dr. E. M........Examinations of Sputa 19
Harvard University........Dental Department 16
Harvard University.......Medical Department 32
Hobbs, J. E.......................Sleigh Runners 4
Hospital Appointment......................... 2
Improved Movement Cure Institute.......... 18
Leedom, Charles...............Nuclein Solution 3
Lehn & Fink.....................Mfg. Chemists 21
Lloyd, Andrew J. & Co. .....Manufg. Opticians 2
Long Island College Hospital................. 16
Machie, Dr. L. V. G. ....Sanitarium 19
Maltine Mfg. Co.............................Maltine 12
Mariani & Co.......................Vin Mariani 11
Marks, A. A.....................Artificial Limbs 20
Martin, Dr. F. C..................Vaccine Virus 23
McElroy, P. J....................Glass Syringes 18
Medico-Chirurgical College 16
Norton, Dr. Eben C....... ....Card 19
N. Y. Polyclinic and Hospital................. 16
N. Y. Post-Graduate School and Hospital.. 17
Oakland Chemical Co.......Hydrogen Dioxide 12
Office To Let.................................. 2
Patch, E. L. Co............. .....Lithia Tablets 26
Peake & Buzzell ....Surgeons' Supplies 25
Pinaud, Ed........................Sels Romains 23
Polk, R. L. & Co........Med. and Surg. Register 24
Position Wanted............................... 2
Purdue Frederick Co., The.................... 3
Ring, Dr. Allan Mott.........Nervous Diseases 19
Rosse, Dr. Irving C........................... 19
Russell, Dr. F. W ....Card 19
Schieffelin & Co..................Mfg. Chemists 14
Schulze-Berge & Koechl......Migranin, etc. 23, 31
Seeley, I. B. & Co.......... .Hard Rubber Trusses 26
Sharp & Dohme...................Mfg. Chemists 10
Stedman, Dr. Henry R.........................Card 19
Stillings, Dr. L. C. ....Card 19
Tanner, E. S........................Publisher 31
Thayer, Henry & Co.......................... 11
Theodore Metcalf Co..........................Coca 8
Twitchell, Dr. George B...................Card 19
Tyree, J. S. ....Antiseptic Powder 28
Umpleby, J. T. ....Photography 2
University of Vermont,........................ 17
Walnut Lodge Hospital......................... 19
Waterman, Dr. Thomas..Animal Vaccine Virus 2
Weeks & Potter Co. ....Quinona 30
Wheeler, Dr. T. B....................Phosphates 28
White, Dr. Walter H..........................Card 19
Willard, Dr. A. J..............................Card 19
Woman's Medical College, Baltimore....... 16
Woman's Med. Coll..of the New York Infirmary 16
Woodward, L. F. ....Stammering 16
Yale University...........Medical Department 16

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3. Special Anatomical Instruction	Dr. Dwight	Medical School	Special*	Special.*
† 4. Histology and Microscopy	Dr. Minot	Medical School	Special*	30.
† 5. Elementary Human Embryology	Dr. Minot	Medical School	Special*	25.
† 6. Advanced Embryology	Dr. Minot	Medical School	Oct.—May	75-125
† 7. Physiology	Dr. Bowditch	Medical School	Special*	Special.*
† 8. Medical Chemistry	Dr. Wood	Medical School	Special*	35.
9. Clinical Microscopy	Dr. Whitney	Massachusetts General Hospital	Special*	Special.*
†10. Surgical Pathology	Dr. Mallory	Medical School	Apr., May	20.
†11. Pathology of the Infectious Diseases.	Dr. Wright	Medical School	Nov., Dec.	25.
†12. Pathological Anatomy and Histology of the Nervous System	Dr. Taylor	Medical School	Special*	15.
13. Clinical Medicine	Dr. Ernst	Massachusetts General Hospital	Oct.	15.
†14. Clinical Medicine	Dr. Knight	Boston City Hospital	Oct., Nov.	10.
†15. Clinical Medicine	Dr. Mason	Boston City Hospital	Nov., Dec., Jan.	20.
‡16. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Oct.	20.
‡17. Minor Surgery	Dr. Conant	Massachusetts General Hospital	Dec.	20.
‡18. Abdominal Surgery	Dr. Conant	St. Elizabeth's Hospital	Oct., Nov.	25.
19. Clinical, Operative, Genito-urinary, Pathological and Minor Surgery	Drs. Monks and Thorndike	Boston City Hospital	Oct.—Dec.	25.
20. Clinical, Operative, and Minor Surgery	Drs. Burrell, Lovett, and Munro	Boston City Hospital	Dec.—Apr.	25.
21. Operative Surgery	Dr. C. B. Porter	Medical School	Special*	25.
22. Clinical Surgery	Dr. M. H. Richardson	Massachusetts General Hospital	Feb., March, Apr., May	25.
‡23. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Oct., Nov., Dec.	25.
‡24. Children's Surgery	Drs. Burrell and Lovett	Children's Hospital	Apr., May, June	25.
25. Minor Surgery	Dr. Scudder	Massachusetts General Hospital	Feb., ‡Apr., ‡May	25.
26. Clinical Surgery	Dr. Gay	Boston City Hospital	Apr., May	15.
27. Clinical Surgery	Dr. Homans	Massachusetts General Hospital	March, Apr.	20.
†28. Orthopedic Surgery	Dr. Bradford	Children's Hospital	Apr.	15.
29. Clinical Obsterics	Dr. W. L. Richardson	Boston Lying-in Hospital	Nov., Dec., April, May	20.
30. Clinical Obstetrics	Dr. C. M. Green	Boston Lying-in Hospital	Jan., Feb., March	30.
31. Practical Obstetrics	Dr. Reynolds, Townsend, and Haven	Boston Lying-in Hospital	Special*	20.
32. Operative Obstetrics	Dr. C. M. Green	Medical School	Special*	25.
33. Diseases of the Skin	Dr. White	Massachusetts General Hospital	Oct.—June	25.
34. Otology	Dr. Blake	Infirmary	Dec., Jan., Apr., May	25.
35. Otology	Dr. Bryant	Infirmary	Dec., Jan	25.
†36. Ophthalmology	Dr. Standish	Infirmary	Dec., Jan.	Special.*
†37. Ophthalmology	Dr. Cheney	Massachusetts General Hospital	March, Apr.	Special.*
38. Gynecology	Dr. Swift	Free Hospital for Women	Oct.	25.
39. Gynecology	Dr. Swift	Free Hospital for Women	Dec.	25.
40. Gynecology	Dr. Davenport	Free Hospital for Women	Jan.	25.
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42. Gynecology	Dr. Haven	Boston Dispensary	Nov.	25.
43. Gynecology	Dr. Swift	Boston Dispensary	Jan., Feb.	25.
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45. Operative Gynecology	Dr. Davenport	Medical School	Special*	25.
46. Diseases of the Nose and Throat	Dr. De Blois	Boston City Hospital	Feb., March	Special.*
‡47. Diseases of the Nose and Throat	Dr. Farlow	Boston Dispensary	Oct.—Jan.	Special.*
‡48. Diseases of the Nose and Throat	Dr. Farlow	Boston City Hospital	Apr., May.	Special.*
‡49. Diseases of the Nose and Throat	Dr. Coolidge	Massachusetts General Hospital	Feb., March	Special.*
†50. Mental Diseases	Dr. Cowles	McLean Hospital	Special*	10.
†51. Bacteriology	Dr. Ernst	Medical School	Special*	25.
†52. Diseases of Children	Dr. Wentworth	Children's Hospital	Oct., Nov.	20.
†53. Diseases of Children	Dr. Wentworth	Children's Hospital	Dec., Jan.	20.
†54. Diseases of Children	Dr. Buckingham	Children's Hospital	Feb., March	20.
†55. Diseases of Children	Dr. Buckingham	Children's Hospital	Apr., May	20.
†56. Neurology	Dr. Knapp	Boston City Hospital	Feb., March	20.
†57. Neurology	Dr. Knapp	Boston City Hospital	Apr., May	20.
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PAGE

ORIGINAL ARTICLES.

MULTIPLE NEURITIS THE ESSENTIAL ELEMENT IN LANDRY'S PARALYSIS. AN ILLUSTRATIVE CASE. *By George L. Walton, M.D.*, Physician to Neurological Department, Massachusetts General Hospital; Clinical Instructor in Neurology, Harvard Medical School 637

OBSERVATIONS UPON RELAPSING APPENDICITIS, WITH A RECORD OF THIRTY-TWO OPERATIONS WITHOUT A DEATH. *By Arthur T. Cabot, A.M., M.D* 641

Pathological Conditions Found. — Character of Operation. — Results Obtained.

CLINICAL DEPARTMENT.

A CASE OF ACUTE OSTEO-ARTHRITIS INVOLVING THE WHOLE CERVICAL REGION OF THE SPINE, IN A WOMAN NEARLY SIXTY YEARS OF AGE, WITH RECOVERY. *Reported by Joel E. Goldthwait, M.D.*, Boston 644

CLINICAL NOTES OF CATARACT PATIENTS. *By David Coggin, M.D.*, Salem, Mass 645

Dislocation Downwards of a Cataractous Lens with Normal Vision.— Rupture of a Pupillary Membrane after Removing a Cataract.— Hemorrhage after Extraction of a Cataract. — Spontaneous Expulsion of Cataracts; Loss of Vitreous; Good Visual Results. — Morsel of Hornblende in the Lens, Simulating Steel.— Collapse of Cornea after an Extraction.

MEDICAL PROGRESS.

RECENT PROGRESS IN OPHTHALMOLOGY. *By Myles Standish, M.D.*, Boston 646

Sub-Conjunctival Injections.—Ocular Troubles of Bicycle Riders.— Muscæ.— Erythropsia.— Hydraulic Curetting of the Cornea.

REPORTS OF SOCIETIES.

BOSTON MEDICO-PSYCHOLOGICAL SOCIETY. *By H. C. Baldwin, M.D.*, Secretary 648

Multiple Neuritis the Essential Element in Landry's Paralysis.

EDITORIALS.

ANNUS MEDICUS, MDCCCXCV 650

MISCELLANY.

METEOROLOGICAL RECORD, DECEMBER 14, 1895 .. 660
RECORD OF MORTALITY, DECEMBER 14, 1895 660
ARMY AND MARINE-HOSPITAL SERVICES 660
SOCIETY NOTICE 660
HARVARD MEDICAL SCHOOL, EVENING LECTURES 660
CORRECTION 660
APPOINTMENT 660

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FOR INDEX TO ADVERTISEMENTS

See last page but one.

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PAGE 18.

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Original Articles.

MULTIPLE NEURITIS THE ESSENTIAL ELEMENT IN LANDRY'S PARALYSIS.[1]

An Illustrative Case.

BY GEORGE L. WALTON, M.D.,
Physician to Neurological Department, Massachusetts General Hospital; Clinical Instructor in Neurology, Harvard Medical School.

It seems probable that in the light of modern research the mysterious disease long known as Landry's paralysis will cease to exist as a distinct entity, though this term or its synonym, "acute ascending paralysis," may perhaps justly be retained as representing a group of cases, of extremely acute onset, and of characteristic distribution, of toxic origin, the essential lesion involving the nerves of the legs, trunk and arms, as well as the vagus and phrenic, implicating probably, at the onset at least, the spinal cord, and to a moderate extent the brain.

Classification of Landry's paralysis under spinal disease dates from a period when the spinal cord was the accredited seat of all paralysis, other than cerebral, and especially of all forms of paraplegia. The propriety of this classification is not established.

Multiple neuritis has steadily encroached upon the domain of the spinal cord in recent years, and in 1889 James Ross, in a series of masterly articles, demonstrated the practical clinical identity of Landry's paralysis with a well-recognized form of toxic neuritis, a doctrine which, though not accepted in its entirety, has on the whole gained ground, though few if any writers consider that multiple neuritis alone covers the entire pathology of the disorder. In the earlier description of Landry's paralysis we find complete relaxed paralysis of the legs, trunk and arms, of extremely rapid onset, with loss of reflexes (at a date when this symptom was studied), but with no disturbance of electrical reaction. There is little or no disturbance of sensibility, little or no disturbance of the sphincters, and no marked wasting. The prognosis is grave, the disease generally proving rapidly fatal through affection of the respiration.

This is certainly a clinical history, which, if taken literally, seems hard to reconcile with peripheral, though no harder than with central disease. Analysis of published cases show, however, that this history is incomplete, and later descriptions of the disease show considerable amplification. For example, out of 93 cases collected by Ross, we find that in 11 only is sensation definitely reported as unaffected, anesthesia with or without pain appearing in 22, paresthesia with or without pain in 25, tenderness alone in 3, hyperesthesia in 2, "fidgets" in 1, no mention of sensation in 15.

The proportion of cases in which sensation is unimpaired is, therefore, no greater than is reconcilable with peripheral disease, and the sensory disturbances in the larger proportion are quite characteristic of neuritis.

With regard to the electrical reactions, in 32 only of the cases quoted by Ross were the reactions tried, and in 12 of these the reaction of degeneration, complete or partial, was found. A careful analysis by this author of the cases remaining shows that in most instances the faradic current alone was used, "retained faradic irritability being quite compatible with that inversion of normal formula of galvanic reaction which constitutes the reaction of degeneration in its partial form." It will be noted in our case that faradic contractility was normal in certain muscles (for example, right deltoid), in which the galvanic test showed inversion of normal formulæ (An Cl greater than Ka Cl).

In many of the cases the fatal onset occurs too early for reaction of degeneration to become established, a fact emphasized by that of Bernhardt, in which the early reactions were normal, but degeneration reaction appeared late in the progress of the disease.

It seems, therefore, that the two elements most difficult to reconcile with peripheral neuritis, that is, lack of sensory disturbances and tenderness, and of electrical impairment, are by no means essential elements of the disease, no more cases offering these peculiarities than are compatible with neuritis, in which it is known that sensory disorders may sometimes fail, and electrical reactions be found normal, at least at certain stages.

Now let us see how many of these cases conform to the classical type in respect to *both* loss of sensation and the electrical reaction. Out of the 11 cases without loss of sensation, in five no mention was made of the electrical reactions, in one faradic contractility was lost, in one galvanic reaction was altered, in one both affected, in three only the electrical reaction was mentioned as normal. In the 15 in which no mention of sensation was made, electricity was not used in 13, the reactions were found normal in one, and lost in one.

This leaves us four cases only out of 93 in which sensation was unaffected *and* electrical reactions were not impaired — a small number on which to base a classification. I have analyzed with reference to these points the 29 cases to which I had access out of the 48 published since the summary of Ross, with the following result: sensation unaffected, five only; anesthesia, with or without pain, nine; parésthesia, eight; tenderness alone, one; pain alone, five; no statement regarding sensation, one.

Of the five cases without affection of sensation, in one there was no loss of electrical reaction (this expression probably meaning faradism), in the other four no note was taken of the reactions, adding therefore only one record to the list of cases following the generally accepted description of the disease, the electrical record even in that one case being incomplete and unsatisfactory.

With regard to the question of muscular wasting, it seems on looking over the recorded cases that wasting of muscles is apt to occur in the convalescent cases, not in the early fatal. But a glance at the period of fatality in those cases easily explains this anomaly — certainly neither muscular wasting nor degeneration reaction could be expected to appear in three days, the duration of one case in which their absence was noted, and even periods of six and nine days, as found in two others, are by no means enough to establish these points.

With regard to the question of fatality, analysis of 121 cases (including the 93 of Ross, and the 28 of the 29, of which I was able to find the termination, out of those reported since Ross's article) shows 77 fatal cases against 44 protracted recoveries, that is, 36 per cent. gradually recovered while 64 per cent. died. This is certainly a large percentage of deaths, but does not justify the grave prognosis ordinarily given.

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[1] Read at a meeting of the Boston Medico-Psychological Society, November 21, 1895.

It may be maintained that the fatal cases alone were worthy of being classed under Landry's paralysis, but the careful perusal of the records shows a similarity among the cases too striking to allow this claim. In all, the rapid onset, the complete involvement of the trunk, the embarrassment of respiration, the total relaxed paralysis with loss of reflexes (where tested), and absence of marked sphincter weakness, were sufficiently conspicuous to justify forming a group, whether as a distinct class or as a subdivision of a class already established.

In respect to the ètiology, it is a significant fact that in most of the cases in which a cause was assigned, that is, in about half, the cause was one generally recognized as giving rise to multiple neuritis; for example, alcohol, septicemic processes, syphilis and acute infectious diseases.

When we come to consider the pathological findings, the majority of autopsies may be disregarded as not sufficiently complete and accurate from a microscopical and bacteriological point of view to be conclusive. Certain it is, however, that various careful post-mortem examinations have revealed sufficiently marked changes to give a clue to the process; notably the following:

Centanni found marked interstitial neuritis, and micro-organisms in the cord. Oettinger and Marinesco found nothing in the peripheral nerves, but in the gray matter of the spinal cord found infiltration of vessel walls with leucocytes, the latter filled with microbes (dipplococcus), also with megarocytes with vacuoles and degeneration due to streptococcus. Eisenlohn found degeneration of peripheral nerves, also acute myelitic processes, and micro-organisms in the cord, as well as in the peripheral nerves. Pitres and Vaillard found marked degeneration of peripheral nerves, nothing in the cord. Baumgarten and Curschman found respectively, bacilli of malignant pustule and of typhoid in the cord. Hun, who opposes the view of neuritis, and regards the disease a clinical entity, found only a few degenerated fibres of the anterior roots of the cauda equina, and cerebral and spinal meningitis of recent origin.

In view of the frequent implication of the cord, as demonstrated by autopsy, it may be pertinently asked, why classify the disease under neuritis? But, conversely, it may be asked why, in view of the frequent implication of the peripheral nerves, should it be classed under spinal diseases? In other toxic disorders, notably lead-poisoning and diphtheritic paralysis, in which peripheral neuritis is considered the essential process, the cord is sometimes also invaded, and cases of so-called Landry's paralysis, though more acute, correspond much more nearly to this type of disorder than to disease of the cord. This is certainly true of the convalescent cases, which offer opportunity for careful study, and even in the cases rapidly succumbing to the overwhelming effects of the poison, signs are present that the nerves are also affected (pain and tenderness being frequently present) though the cord and brain are also attacked by the products of infection. The restlessness and hysterical tendency often noted at the onset certainly point to temporary involvement of the former organ.

The cranial nerves are occasionally affected, though the cerebral symptoms are generally limited, if present, to those mentioned. In our case the restlessness was extreme, and temporary diplopia showed slight implication of the cranial nerves, other than phrenic and pneumogastric.

The foregoing considerations would seem to justify material modification of the disease. Perhaps it might fairly be described as follows:

Landry's paralysis is an acute toxic disease, characterized by rapid loss of power in the lower extremities, trunk, and to a less degree in the upper extremities, affecting also the vagus and phrenic, sometimes other cranial nerves. The affected muscles are lax. Pain, paresthesia, anesthesia, and tenderness are generally present in varying degrees, though in some cases sensory disturbances are wanting. Death follows in more than half (64 per cent.) of the cases. Recovery when present is very slow. The reflexes, deep and superficial, are lost at an early stage; wasting and degeneration reaction appear if the patient survives. The process is a toxic affection of the peripheral nerves (neuritis), cord and brain, the former being the essential and persistent lesion.

These introductory observations will enable us to appreciate, on the one hand, how closely our case conforms in its essential characteristics to the type of so-called Landry's paralysis, and, on the other, how appropriately it falls under the head of the now well-recognized toxic multiple neuritis.

The discussion of its etiology I leave to those more learned in bacteriology than myself; but in view of a possible connection with the surgical experiences through which the patient has passed, I have invited Drs. Cabot and Harrington to be present, as well as Dr. Gannett, under whose care he came during the paralytic stage, and to whom I am greatly indebted for asking me to see the case in consultation, and for allowing me the opportunity to study and report it. I wish also to express my appreciation of the careful hospital reports for which the history is mainly taken, and specially those of Dr. Joslin, who followed the case with great care and completeness during the period which was of special interest from a neurological point of view.

The patient is a man about thirty years of age, of Irish extraction, a letter-carrier. Admitted into Dr. Cabot's service February 15, 1895.

Family History. — Father had kidney and asthmatic trouble; is said to have died of *la grippe*. Mother suffered from nervous prostration, and is said to have died of heart failure. Two brothers and two sisters died in infancy. One brother is in good health but nervous; two sisters are living, not very strong.

Habits. — No tobacco. Gonorrhea at seventeen; again at twenty-four. No history of other venereal trouble.

Patient's History. — Has had scarlet fever, measles, varioloid, and whooping-cough; *la grippe* five or six years ago. As far back as he can remember, has had to get up at night to pass water; no incontinence After the first attack of gonorrhea had the usual burning and frequency of micturition. Discharge lasted nine months. Was then perfectly well till second attack of gonorrhea. This attack was followed by the same symptoms, and lasted for about the same time. When in health has had to pass water every two hours. Beginning September, 1894, micturition was very frequent (from two minutes to three hours). He stopped work. Had chills and fever at night, and profuse sweating. There was flatulence at night. Slept fairly well. Appetite was poor; lost weight. On coming under Dr. Cabot's case had lost ten pounds since January 1, 1894. There was pain in the left renal region and in the left groin, and the kidney could be felt as a distinct tumor which was not tender to pressure. Jolting made micturition more frequent and increased the pain. There was a smarting sensation through the rectum and bladder after passing water. Has not been a heavy drinker, though a more or less steady one. Repeated examination of the urine failed to show tubercle bacilli.

Examination under ether by Dr. Cabot showed no stone on sounding.

On March 14th there was, on the whole, less pain than at entrance. The urine was of good quantity, and contained less sediment. There was still much pus, small round cells and blood globules; albumin, a trace. Repeated examination showed no tubercle bacilli. He was transferred to Waverley, relieved.

He was re-admitted under Dr. Harrington, June 3, 1895, with the following history: Since discharged, symptoms have remained much the same, but has lost gradually a little in general health. Still abundance of pus in urine; pain in left side. Kidney can be felt on the left, enlarged and somewhat tender. Patient is very thin and anemic, though strong enough to walk about. Put to bed and watched. Alcohol with dinner. Strychnia, one-sixtieth, t. i. d. No tubercle bacilli in the urine. Dr. Harrington operated June 11th.

Operation. — Ether administered. An incision, four inches long, was made in the left flank, one inch above, and parallel with, the crest of the ilium. The incision was carried into the peri-nephritic fat, and the kidney isolated with the fingers. The surface of the kidney was exposed by dissection from the peri-nephritic fat over a space of several inches. Puncture with the aspirating-needle directly into the kidney substance revealed pus. An incision, two inches long, was made into the kidney substance, and was followed by a gush of pus. Washed out with boiled water. The finger introduced into the kidney felt calculus. This was withdrawn between the curette and the finger. Cavity douched with boiled water. Further exploration with the finger into the kidney showed tissue very friable and infiltrated with foul pus. Another large pocket of pus was found containing a calculus, and douched as before. In this way another pocket was opened, and five calculi in all, varying in size from a pea to a small marble, were removed. Several ounces of foul pus were removed and the cavity cleaned out as thoroughly as possible. At the end of the operation the finger enters three cavities, the middle being the deepest and having a smooth lining supposed to be the dilated pelvis of the kidney. Drainage-tube surrounded with gauze inserted to the bottom of this cavity; the other two cavities packed with iodoform gauze. Dry dressing. Considerable shock after operation, but patient responded to stimulation with brandy (enema) and subcutaneous injection of strychnia.

Second day, patient very weak and all motions extremely painful. Much discharge, and dressing soaked with urine. Tube syringed with boracic acid, 1 to 40. Half an ounce of brandy every four hours.

Fourth day, still weak and motion painful. Pulse small and quiet. Strychnia, one-fortieth of a grain every three hours.

Seventh day, patient very comfortable. Pulse good. Passed 64 ounces of clear, pale urine. Dressing the same, but tube has been removed.

Ninth day, rapid general improvement. Has no pain, and moves freely. Is gaining flesh.

Twenty-fifth day, improvement seen every day in flesh and strength. Has been up and about for some time. A sinus three or four inches deep extends inwards and backwards. There is a line of granulations. Considerable discharge of pus, though free from pain. Patient discharged much relieved.

Re-admitted under Dr. Gannett's service August 28, 1895.

Last Friday night pain appeared in right lumbar region, and has been constant, though varying in intensity to time of entrance. Sunday night there was pain on both sides in the lumbar region. This extends through thighs to knees, also through to legs and buttocks. Pain in legs came Monday night, lasted twenty-four hours. Yesterday morning lost control of both legs within a few hours. Can move toes only. Sensation not affected. Vomited considerably Monday, but not since Tuesday morning. Diarrhea Monday, none since. No incontinence of feces, but has scalding movements. Urine passed in spurts. Catheterized yesterday afternoon by Dr. Harrington, and has not passed urine since. No cough, no palpitation. Yesterday and to-day has had chills and sweating lasting for a few minutes. Has had severe headache for three days. Has noticed no change in eyesight. Some twitching of legs, with an occasional cramp in calf of both legs. A sinus in left back at seat of wound has discharged since he left the hospital. Leucocytes 16,000 (3.25 P. M.). Urine; color normal, acid, 1020, slight uric-acid zone; albumin, one-eighth; sugar, none; urea, 2.08 per cent. Many hyaline and colorless fine granular casts, chiefly of small diameter. Some with a few renal or blood corpuscles adherent, occasionally blood corpuscles, normal or abnormal, free and on casts.

Physical Examination. — Man of small size, well developed, fairly well nourished. Pupils alike, and contract. Expression anxious and nervous. Lungs negative. Heart apex at fourth space, within nipple line. No murmurs. Abdomen: Below right costal border, two inches from median line, is a rounded body, which protrudes very slightly on inspiration, probably right kidney compensatorily enlarged. On left flank is a scar representing the seat of operation, with sinus from which a moderate amount of pus is discharged. Sensation perfect. All reflexes absent. Legs flaccid, not atrophied. In the afternoon dull headache with nausea and vomiting every half hour. Dr. Gannett considered patient uremic.

Pilocarpine, one-eighth of a grain, subcutaneously at 9 P. M.; blankets. Perspires freely. Nausea persisted till 11 P. M. Then slept three to four hours.

Third day (from onset of paralysis). No headache, no dulness. Sinus discharging freely. Potas. citrat., 60 grains every four hours. High oil injection, followed by enema of suds and glycerine.

Fourth day, passed 25 ounces of urine. No longer necessary to catheterize. Urine: color normal; reaction neutral; specific gravity, 1028; urea, 3.28 per cent.; albumin, one-eighth; sugar, none; sediment slight. Speech hitching. Diplopia. Partial paralysis of left arm, with complete paralysis of both legs, save for slight motion of toes of right foot. Cannot turn in bed. Constantly asking to have position changed on account of pain in legs. Not able with both hands to draw up foot by means of a bandage fastened on toes.

Fifth day, ophthalmoscopic examination by Dr. Amadon. Fundus normal. Reported very restless at night. Trional, 20 grains, in hot milk. Slept one and one-half hours.

Sixth day, restlessness continues.

Seventh day, so very restless that a special night-nurse was ordered, who reported: "Very nervous and restless from 8 to 1.45, urging to have position changed every two to ten minutes. Pain in thighs all night. From 1.45 A. M. to 5.30 called every twenty to thirty minutes to have position changed. Remainder of the time very nervous and depressed. Slept in all one hour and thirty-five minutes." Similar nights for about one week. No renal symptoms from this time. Sulphonal and trional, each, ten grains every night for four nights.

Fifteenth day, involuntary dejection this morning.

Eighteenth day, still involuntary dejection. Patient cannot cough.

At this time the complete physical condition (nervous) is as follows: The limbs are perfectly flaccid and absolutely powerless. Both legs are quite cool, except slight plantar flexion of toes. There is tenderness of the sciatic and peroneal nerves, and in the muscles of the calf and thigh. The lightest touch is everywhere felt, though patient states that the electricity is not so plainly felt over the legs, as, for example, on the right shoulder, and not so plainly in left upper arm as in right. The breathing is very superficial, chest expansion very slight. Abdominal respiration better than intercostal, but apparently impaired. Patient apparently unable to cough, sneeze or blow the nose. Absolutely unable to roll over in bed. Cannot expel feces. The movements of the right arm fairly good. In left arm, loss of biceps, triceps and deltoid. Movements very feeble in pectoralis major, supinator longus, extensors and flexors of the wrist, interossei, thenar and hypothenar muscles. Movements of neck and face unaffected. All reflexes, deep and superficial, lost. Movements of eyes normal, pupils unaffected.

Twenty-ninth day, breathing better. Facial expression better. Wasting of muscles has appeared, being especially noticeable in the thenar and hypothenar muscles. Pulse has varied between 100 and 140.

Thirty-second day, moves left arm a little more. Has not moved legs since entrance.

Forty-sixth day, can now take a long breath. Respiration still largely abdominal. Voice stronger. Pulse 120, respiration 22. No loss of tactile or temperature sense. Finger movements very good in both hands, and patient extends the right wrist well, the left rather feebly. Flexes the wrist well on the right, rather feebly on the left. Ability to cough slightly improved. No return of reflexes. No power in deltoids or triceps of either side. Complete paralysis of lower extremities persists, with marked wasting and coolness.

I have recently seen the case through the kindness of Dr. Monks, under whose care he is at present, at the City Hospital. It is now nearly three months since the onset of paralysis. The reflexes are still abolished, and no power has returned in the legs. Movement of the left arm has improved somewhat, and the muscles of the hand have begun to fill out. Power of retaining and expelling the feces has improved. There has been slight return of power of erection. Temperature has remained normal; the pulse has varied from 64 to 120; the respiration is constant at 25. The patient reports that he sleeps better and feels stronger. Moderate tenderness and pain persist, especially when he is moved.

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OBSERVATIONS UPON RELAPSING APPENDICITIS, WITH A RECORD OF THIRTY-TWO OPERATIONS WITHOUT A DEATH.

BY ARTHUR T. CABOT, A.M., M.D.

SINCE my first operation done for relapsing appendicitis in an interval between the attacks in October, 1890, my experience has led me to become more and more in favor of this method of procedure, and to believe that by generally adopting it we shall save a certain proportion of these cases from sudden fatal inflammation, while certainly relieving all of them from continually recurring discomforts which interfere with their enjoyment of life and with their attention to business.

I find, however, that some of my colleagues are still in doubt as to the wisdom of interference in this class of cases. The experience from which final conclusions can be drawn must be wider than that accorded to one man. That which I have learned from my cases is now published in order to put it within the reach of all those who are thinking and working upon this subject.

The operation done between attacks, when the tissues are in a comparatively healthy state, and not already filled with micro-organisms, is free from many of the difficulties and dangers which surround the acute attack, and consequently its mortality is comparatively trifling. Dr. Bull's statistics put it at about three per cent., and probably, with improved technique and experience in meeting the difficulties encountered, this percentage can, in the hands of good operators, be materially reduced. My personal experience comprises thirty-two operations done upon thirty-one patients without a death.

It is difficult to estimate what would be the mortality among these patients if left to themselves to be operated upon only in case of a severe attack. Some of them might get along without operation. But while reckoning these to the credit of conservatism, we should put on the other side of the account those patients, not a few, who have lost their lives through pursuing the Fabian policy. I can recall several cases in which the expectant plan was followed, and in which an acute attack came on with such rapidity that, in spite of prompt surgical interference, the patient succumbed. I have had one case within a short time where the patient had been long subject to these attacks, and was recovering from one when I saw her. I advised an operation in an interval, but it was not deemed necessary. Two months later I was summoned to operate in an acute attack, and, although my operation was done within ten hours of the onset of pain, I found a perforated appendix with from six to eight ounces of sero-pus free in the peritoneal cavity. Fortunately, our prompt interference saved the patient; but the result might have been quite otherwise had circumstances caused any further delay.

These are the cases which make the slight risk of an operation during quiescence justifiable and of wise acceptance.

There does not seem to be any sure way in which we can separate the cases in which we are to fear acute inflammation from those that are likely still to run a subacute course. I am inclined to feel that if the patient continues to have slight discomfort in the iliac region after the acuteness of the attack subsides, that that is a case in which an operation is imperative. These are the cases in which the appendix is often palpable and tender to pressure.

Also the degree of severity of past attacks will guide us somewhat in judging of future ones, and if they are successively increasing in severity, an operation will appear more urgent than when they are pursuing a steady subacute course.

It sometimes happens on the other hand, that a severe attack may bring about a spontaneous cure by causing obliteration or total destruction of the appendix so that after a very severe attack with evidence of abscess formation, it is well to wait for further evidence before deciding that the appendix must be removed.

The diagnosis of a relapsing appendicitis is usually not difficult. It happened, however, in one of my early cases, that several good observers were deceived and the appendix was removed in a case where subsequent developments showed the attacks to be probably due to irritation of the right ureter by the passage of oxalic gravel.

Since this experience, I have had three or four cases referred to me which were believed to have trouble in the appendix, in which careful study showed the pain to be due to oxaluria. I have also seen one case in which cancer of the head of the colon gave rise to symptoms which were ascribed to the appendix. With these exceptions the diagnosis has been tolerably clear.

Much has been written of late to show that the operation is a trivial one and of sure success. Such is a fact in those instances in which the attacks have been comparatively slight, or in which the operation has been done early, before the intestines have been seriously matted together and in which, therefore, the adhesions are soft and easily separated. When, however, the cecum and adjoining coils of intestine are firmly matted by extensive and old adhesions, it may become a difficult and dangerous undertaking to search for and remove the appendix; sometimes, indeed, as will be seen, the attempt has to be abandoned. It is in this last class of more serious cases that information as to the exact technique of the operations and the relief of symptoms obtained is especially desirable.

PATHOLOGICAL CONDITIONS FOUND.

In most of my cases the appendix was found distorted. In the majority of instances it was bent sharply on itself and bound down by adhesions. In one or two cases, it seemed clear that the distortion was due, primarily, to a short mesentery which held the appendix twisted back under the head of the colon. It was impossible to determine positively whether this condition was congenital or due to contraction of the mesentery by past attacks of inflammation. It seemed probable, however, in several of the cases, that a congenital shortness and malposition of the meso-appendix had caused a predisposition to inflammation.

In almost all cases the appendix was firmly adherent, often buried between coils of adherent intestine, and very difficult of removal. In a considerable proportion of the cases the appendix was deeply buried, and firmly adherent beneath the head of the colon. In several of these distorted appendices intestinal concretions were found.

In one case the appendix was perfectly straight, stretching down into the pelvis beside the rectum, and was held in that position by a firm band of adhesion attached to its tip. The distal half of the appendix was very narrow, nearly obliterated; then came a dilated portion in which lay a fecal concretion, about the size of a kidney bean; and then, just before its entrance to the cecum, the appendix was again narrowed, so that the concretion was imprisoned.

In some cases, where the appendix was closely tied down, it was found upon separating it, that a perforation existed which was closed by the adhesion of the appendix to the omentum, to an adjoining coil of intestine or to the abdominal wall. Twice a little abscess cavity was found, communicating through a small opening with the interior of the appendix, and evidently discharging through it.

Besides these grosser anatomico-pathological conditions of misplacement, twist, foreign body and perforation, there were other changes which required microscopical examination for their right understanding.

In some appendices a considerable ulceration of the mucous membrane and infiltration of the deeper layers with small cells was found at the time of operation. In others, cicatrices of mucosa with thickening of the outer coats gave evidence of previous ulcerations; and in some, the mucosa had been entirely destroyed over considerable surfaces, and the lumen of the appendix was much narrowed or even closed by the subsequent cicatrization.

A portion of the distal extremity of the appendix may be thus shut off from any communication with the bowel; and if, in subsequent attacks of inflammation, fluids accumulate in this distal portion, they are likely to lead to rupture of its wall, with infection of the peritoneal cavity. In some cases considerable portions of the tube are wholly obliterated, and if the terminal portion is thus closed, it is, of course, a conservative happening.

Some time after this was written the paper by Dr. Senn appeared in which he describes, at some length and with microscopical illustrations, the pathological processes by which this gradual obliteration is brought about. While I have not, as yet, happened to meet with cases in which the process has affected so large a portion of the appendix as in some of his cases, still the condition described by him was precisely the same as that I have roughly described above.

I now come to the final group of cases that I have met with, and to which I wish to draw especial attention. These are four cases in which, after as thorough a search as I felt at the time to be justifiable, I failed to find the appendix. In one of these cases I found and removed it at a subsequent operation. In all of these cases the coils of the intestine about the cecum were bound together by many and firm adhesions.

It is often difficult at a post-mortem to thoroughly understand the relations of contiguous and adherent coils of intestine, and this can sometimes only be accomplished after the bowel has been opened, so that its lumen can be followed. How much more difficult is it, then, to speak positively of these relations in cases in which the cavity of the intestine has to be respected, and in which also, the investigation is necessarily carried on through a limited opening?

In view of these difficulties, these observations upon the anatomical relations found in these cases are offered with reserve.

Case I[1] was that of a boy, twelve years of age, who had had his first attack of abdominal pain nine months previous to the operation. Following this, he had had more than a dozen similar attacks, which had gradually come closer and closer together, and latterly a tumor about the size of an orange had appeared in the right iliac fossa. This had been persistent for two months, although diminishing somewhat in size between the attacks.

At the operation this tumor was found to be made up of a bunch of omentum and coils of intestine bound together. On pulling these aside, the cecum was uncovered. The tendinous line down the front of the cecum disappeared at its lower end, looking as if the appendix was curled in beneath the caput coli and adherent in that position. Careful palpation could not detect anything that felt like an inflamed appendix in that situation. An attempt was made to dissect out the cecum, in order that a search might be made for the appendix beneath it, but presently the outer layers of the intestinal wall began to give way and the attempt was abandoned. The boy made an excellent recovery. He had one or two slight feelings of discomfort in the abdomen soon after his return home, and since that time he has been perfectly well.

Case II. J. B., a man of thirty-one, began in the latter part of the year 1888 to have attacks of pain in the right iliac region. In 1889, he was in the Massachusetts General Hospital with such an attack, which was not accompanied by high fever and soon yielded to remedies. In October, 1893, he re-entered the hospital with the history, that, since his last visit there, he had engaged in light work, but had had discomfort pretty constantly in the right iliac region. A hard, cord-like mass was to be felt in the region of the appendix just on the brim of the pelvis.

October 23, 1893. Under ether an opening was made in the right linea semilunaris. The ileum was found twisted down over the lower end of the cecum and firmly held there by dense adhesions. The cecum was also bound down posteriorly by a dense mass of fibrous tissue. The ileum was freed as far as possible and it was then found that the tendinous line disappeared beneath the head of the colon as if the appendix were buried beneath the cecum. Nothing, however, could be felt of it, the mass which had been felt before the operation proving to be merely dense fibrous tissue. The colon was dissected up considerably from its posterior attachments, but no trace of the appendix could be found. The opening was closed after relieving as far as possible the adherent condition. I heard from this patient in the middle of January, 1894. He said that he had enjoyed good health since the operation and had had no pain at all. He had gained eighteen pounds.

Case III. B. F. D., a spare man of forty-nine, was sent to me in January, 1894. His abdominal trouble dated from June, 1891, when, after many indiscretions of diet, he had an attack of general abdominal pain with a temperature that ran as high as 102° F. The bowels were inactive for a number of days, and the pain was more severe in the right inguinal region than over the rest of the abdomen. After this attack which lasted for three weeks, he had a number of others, similar in nature, but of less severity.

When I saw Mr. D., he had considerable tenderness over the seat of the appendix, but no tumor could be felt even on deep palpation. It was evident from the history that he had had at least one sharp inflammatory attack in the cecal region, probably appendicitis. From the tenderness existing at the time of my examination, it seemed pretty certain that some chronic inflammatory condition still persisted there. From my notes I find that I wrote his physician at the time that, "possibly his discomfort was largely due to adhesions in that region." I operated on Mr. D. on January 25, 1894.

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[1] Reported in the Boston Medical and Surgical Journal for July 27, 1893.

The coils of intestine about the cecum were much bound by adhesions, with the ileum twisted down sharply over the lower end of the cecal pouch and held there by adhesions to the parietal peritoneum over the iliac muscle and vessels.

These adhesions were readily separated, and the ileum was pushed over towards the middle of the abdomen. This entirely uncovered the cecum, and the anterior tendinous line disappeared beneath its lower end without any vestige of an appendix being visible or palpable.

An attempt was made to separate the cecum from its posterior attachments, so as to get at the appendix which presumably lay behind it. It was presently found that the intestinal wall was giving way, and here, too, the attempt to find the appendix was abandoned. I was encouraged to stop the operation at this stage by the success which had attended the simple breaking up of the adhesions in the two previous cases.

The relief obtained, however, was not as distinct as in the former two instances, and I have lately heard (November, 1895) that he still suffers from discomfort in the cecal region with occasional attacks of pain.

CASE IV. Just after my operation on Case III, I had another very similar in many respects, and in which I had an exceptional opportunity to see how a moderate degree of inflammation may lead to very extensive adhesions causing a constantly progressive and finally serious intestinal obstruction.

The patient was a physician, so that his accurate history may be relied upon.

H. J., born in 1859, remembers to have had in 1877 a moderate colic, not accompanied by vomiting, with which he was laid up for but a few days. In 1886 he had a similar mild attack of abdominal pain. In October, 1892, this was again repeated, still without nausea. In January, 1893, he had a more severe attack, associated with vomiting and diarrhea. In February he had two attacks, and now for the first time there was localization of pain in the right iliac region. In March he had two attacks, and during that summer he had two slight attacks unattended by nausea.

In October, November and December he had attacks of some severity, but never lasting for more than two or three days. In none of the attacks up to this time had the temperature risen above 100° F.

In January, 1894, he had two attacks, and I saw him for the first time in the last of these. The history, together with the localization of pain in the right iliac region, seemed to point to the appendix as the seat of trouble, and I advised an operation which was carried out on February 1, 1894.

The ileum was found twisted across the cecum, as in the three cases just described, and adherent to it and to the brim of the pelvis. Although the pain of the last attack has subsided a week or ten days before this operation, the adhesions were in a rather active state of inflammation, being much reddened and covered by a layer of greenish-yellow friable lymph.

This was readily wiped away, and the adhesions were broken up until the intestines went easily back into their normal position. On uncovering the cecum, it was found that the appendix was buried beneath it exactly as in the three cases just reported. There was no appearance of inflammation about it and it was not so thickened or enlarged as to be perceptible to the touch.

The intestinal walls were somewhat softened by the inflammation still present, and showed a tendency to tear when efforts were made to separate the cecum from its posterior attachments.

The limitation of the evidences of active inflammation to the outermost adhesions and the absence of any induration or swelling about the appendix made me hopeful that the present troubles were mainly due to the adhesions and therefore likely to cease on the restoration of the intestines to their normal position. The operation was therefore stopped after this was accomplished.

Sixteen days after the operation there was an attack of nausea and abdominal pain without special localization in the right iliac region. Ten days latter there was a similar attack; and after this for some time these attacks repeated themselves about once a fortnight, and then began to come somewhat more frequently.

They were usually relieved and seemingly cut short by laxative remedies.

In the autumn they began to be more and more severe, until in December, 1894, they came every week, and there was discomfort in the right iliac region most of the time.

In all of these attacks the distinctly obstructive nature of the symptoms was very marked.

It was decided to again operate and to remove the appendix, as it was believed that it must be the point of irritation which was responsible for the re-formation of the adhesions.

On December 30th, the patient went to a private hospital, and at once began an attack which proved the most severe he had ever had, culminating in very distressing fecal vomiting.

On January 8, 1895, after the subsidence of this attack the operation was done.

Again the intestines about the cecum were found very adherent. The adhesions were firmer and more extensive than before, but showed no signs of recent inflammation.

The tendinous line upon the front of the cecum was followed down where it turned beneath into the post-cecal pouch, and after a long dissection the appendix, which was firmly bound over its whole surface was finally freed and removed. It was not enlarged but showed the signs of old inflammation by a partial obliteration of its lumen. No signs of any recent inflammation were apparent, although as has been said, the patient was just recovering from the most severe attack of pain and obstruction that he had ever had.

The recovery from this operation was uneventful, and it was followed by a complete restoration to health, the patient gaining thirty pounds in the next few months.

It was interesting in this case to notice what an extensive tying up of the intestines resulted from an appendix which showed no signs of any active inflammation; and yet that the appendix was responsible for the adhesions cannot be doubted in view of the entire relief which followed its final removal.

It is interesting to contrast the first two cases, in which entire relief followed the separation of adhesions, with the two later cases which were to all appearances similar in anatomical condition and yet were not relieved by a similar operative procedure.

It would seem probable in the former cases either that the appendix had been destroyed by sloughing or by chronic obliterative inflammation, or that the inflammatory condition in it had so far subsided that when the adhesions were once separated there was no tendency for them to form again: while in the last two cases a very slight chronic inflammation of the appendix remained, which was enough to lead to a renewal of the adhesions even after they had been thoroughly separated.

The outcome in the earlier cases encouraged us to hope much from a simple freeing of adhesions in cases where the appendix seemed quiescent and could only be reached by extensive dissection. In fact it was so favorable as to make a difficult dissection seem unjustifiable in similar cases. But the later cases demonstrated the impossibility of determining when a buried appendix was quiescent and showed the importance of making the greatest possible effort to reach and remove it in every case.

I shall do a second operation on Case III, if the patient continues to have enough discomfort to lead him to consent.

In the *British Medical Journal* for March 9, 1895, Mr. Treves reports a series of eighteen cases, in two of which a condition similar to that just described was found and in which the appendix was not removed. Relief followed the operation in one of these.

Cases 20 and 30 are included in this table even though they were operated upon during the attack, because in both of them the inflammation found was of so mild a grade that, after the removal of the appendix, the abdomen could be tightly closed.

Case 20 was of especial interest clinically, for, although there was severe pain and a temperature of 102° F., the appendix was found only moderately swollen and injected. The peritoneum in the neighborhood was also injected as if it were being subjected to severe irritation. Unfortunately, I did not have a culture tube with me to test the possible presence of organisms outside of the appendix.

CHARACTER OF OPERATION.

The incision was made, in these operations, through or close to the linea semi-lunaris. The opening in the muscular wall was rarely over two inches in length and there was usually no difficulty in finding and freeing the appendix. Occasionally, the use of the Trendelenburg position was of material assistance in enabling a deep-lying appendix to be uncovered and readily dealt with.

The method of treating the stump was, when possible, to strip back a cuff of the peritoneal coat and with catgut to tie off the appendix, flush with the bowel-wall inside of this cuff of peritoneum, which was then pulled over the stump and stitched with fine, continuous black silk. In all but one operation, the abdominal wound was tightly closed without drainage. In that case,[1] a small abscess was found deep below the cecum in connection with the end of the appendix, and it was thought safer to leave a tube and wick of iodoform gauze reaching down to its cavity.

RESULTS OBTAINED.

Besides the relief from periodic attacks of inflammation, it has been quite a common experience with me to see the operation work a total change in the digestive powers of patients. Two of them who are physicians have especially noted the fact that since the removal of the appendix they can, with immunity, indulge in the pleasures of the table as they never could before. In a large proportion of cases there has been a substantial gain in weight, reaching about thirty pounds in several instances.

It is too soon to know how many of these patients will have trouble from hernial protrusion through the scar; but, as yet, nothing of this sort has occurred in any of them, and in but one case has the scar shown any sign of stretching. In that case there was suppuration in the wound due to infection of it from the appendix, which contained pus.

Clinical Department.

A CASE OF ACUTE OSTEO-ARTHRITIS INVOLVING THE WHOLE CERVICAL REGION OF THE SPINE, IN A WOMAN NEARLY SIXTY YEARS OF AGE, WITH RECOVERY.

REPORTED BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

CASES of acute osteo-arthritis in which the spine is involved are not common, and it is for this reason that the following case is reported.

The patient, a woman fifty-eight years of age, by occupation a nurse, had always been well and actively engaged in her work until the present sickness. Her family history is good, and she has never had the least trouble from rheumatism.

In July, 1893, she was caught in a thunder-shower, and her clothing wet through. The next morning she complained of pain in the neck, with some tenderness in the upper part of the chest. There was no cough or expectoration. The pain in the neck increased in severity very rapidly, until the slightest motion caused the most intense suffering, and because of this the patient was admitted to the Good Samaritan Hospital. The patient entered the hospital in the service of Dr. Coolidge; and it was through his kindness that I was enabled to see her.

At the time of the first examination the patient was evidently suffering a good deal. The head was held a little to one side, the chin to the left, the shoulders drawn up, and all motions were most carefully guarded by muscular contraction. Any attempt at motion caused great pain. None of the other joints were in the least involved; and aside from this local condition the patient seemed well.

For the first week or two the patient was kept quiet in bed, and the various rheumatic remedies freely given with very little if any effect. After this a Thomas collar was applied for more complete fixation, and following this light weight extension was used. These gave some relief, but neither could be used continuously because of the nervousness of the patient; so that the two appliances were used alternately, each being worn for a few hours.

In three or four weeks after the beginning of the attack a swelling appeared in the right side of the neck. This was about the size of a small lemon, and was apparently connected with the spine. At the

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[1] No. 9 in the table.

THIRTY-TWO OPERATIONS FOR RELAPSING APPENDICITIS.—CABOT.

No.	Name.	Age.	Date of operation.	Attacks previous to Operation.	Condition found.	Subsequent History.
1	J. M. H.	25	Nov. 3, 1890.	First attack ten months before. Second attack four months before operation.	Appendix strongly bent beneath the cecum. Enlarged and thickened walls and ulcerated mucous membrane.	Entire relief.
2	P. McD.	12	July 24, 1891.	Nov., 1890. Since then twelve attacks.	Extensive adhesions of omentum and intestines separated. Appendix not found.	Two slight sensations of pain in domen after returning home. Si then perfectly well.
3	H. W. L.	22	Oct. 26, 1892.	First attack ten months ago. Eighteen attacks since.	Appendix twisted, thickened, and contained a concretion.	Entire relief.
4	F. C. A.	19	Nov. 1, 1892.	First attack a year and a half previously and second attack in April, 1892.	Appendix stretched down into the pelvis, narrowed near the bowel, containing a concretion.	Operation followed by entire rel
5	P. C.	21	Jan. 11. 1893.	Had five attacks of appendicitis, first in March, 1889.	Appendix found constricted and bent upon itself with small perforation closed by adhesions.	Perfect health. Scar less solid th usual owing to stitch abscess. hernia.
6	Miss M. M.	21	July 3, 1893.	Attacks for past five years. Five attacks since October, 1892.	Distorted and somewhat adherent appendix.	Relieved from the old pain. S solid.
7	W. F. B.	19	July 13, 1893.	First attack one year before. Since then two attacks.	Appendix twisted and tied in behind cecum by adhesions.	Entirely relieved.
8	Dr. H.	40	Aug., 1893.	First attack in 1885. Since then attacks every few months. These moderate in severity till 1893 when they became more severe.	Distorted and somewhat adherent appendix.	Entirely relieved of attacks. Chro indigestion also relieved.
9	N. A. J.	34	Aug. 19, 1893.	In June, 1893, had sharp attack of colic with chills and vomiting. In bed twenty days. Afterwards pain persisted in right side and leg. Worse when walking.	Appendix extended into pelvis where there was a little abscess in communication with the end. Gauze and drainage tube.	Entirely relieved.
10	F. Q.	23	Aug. 26, 1893.	First attack five years ago. Three attacks since January, 1892. Last one August 13, 1893.	Appendix much enlarged, perforated at tip and in middle and wholly enveloped with adhesions.	Entirely relieved.
11	H. K. P.	24	Sept. 18, 1893.	Five attacks in year preceding the operation.	Appendix sharply bent on itself with a perforation at the bend which was closed by adhesions.	One month after operation had dominal pain, relieved by laxativ Since then well. Gained pounds in the next year.
12	F. E. H.	16	Oct. 11, 1893.	In February and July, 1893, severe attacks. After July an attack every three or four weeks.	Appendix so sharply twisted as to make almost a complete knot.	Entirely relieved. Gained sevent pounds in three months.
13	J. B.	26	Oct. 23, 1893.	First attack in 1889. Constant discomfort and tenderness since, with about two sharp attacks yearly.	Many adhesions separated. Appendix buried beneath caput coli and not found.	Entirely relieved. Gained eighte pounds.
14	Dr. S. E. W.	39	Nov. 27, 1893.	First attack in 1883. Next attack 1890. After these attacks about once in four months.	A stiff-walled appendix with a concretion in the terminal portion, bent sharply upon itself at about the middle and adherent to the colon.	Weight increased from 108 to pounds. Entire relief of troul some indigestion and great impr ment in nervous tone.
15	B. F. D.	49	Jan. 25, 1894.	First attack in June, 1891.	See Case III in the body of the paper.	
16	Prof. H. G.	54	Jan. 30, 1894.	First attack in Oct., 1893. Second one in Dec. and a slight one in Jan., 1894.	Appendix bent in beneath caput coli, and adherent there. Narrowed in places by chronic inflammatory thickening.	Entire relief, except for neuralgi right leg during the follow March. This promptly passed
17	Dr. H. J.	38	Feb. 1, 1894.	First attack in 1877, second attack in 1886, third attack in 1892. After Jan., 1893 he had about two attacks a month, except in the summer when they were less frequent.	Cecum and ileum tied up by extensive adhesions which were covered with greenish lymph. Appendix not found. See Case 22.	Slight relief from the severity of attacks for a time, then prog sively increasing severity of attacks until finally the condit worse than before.
18	W. Y. P.	35	Feb. 22, 1894.	Troubled with indigestion for twenty years. First attack of appendicitis in 1884. Since then three or four moderately severe attacks a year.	Appendix straight but occluded at distance of one inch from the ileum.	Entirely relieved from the attack
19	Dr. F. W. W.	40 (?)	Feb. 28, 1894.	First attack fourteen years ago. Many mild attacks since. Had also oxaluria and a stiffness of back.	A twisted, adherent and partly obliterated appendix.	Subsequently developed Pott's ease with left psoas abscess.
20	Miss S.	19	Sept. 15, 1894.	For several months she had constant discomfort in right iliac region with occasional exacerbations of pain.	Operated in midst of attack with temperature 102°. Appendix congested and bent upon itself.	Entirely relieved of the discomfo and pains she had previou suffered.
21	I. R. T.	32 (?)	Dec. 14, 1894.	First attack in Aug., 1894, and after that about once a fortnight till time of operation.	Appendix large with thick walls and containing pus. It was adherent to anterior abdominal wall.	Entirely relieved and gained grea in weight.
22	Dr. H. J.	39	Jan. 8, 1895.	See full history in the body of the paper. Second operation on Case 17.	Appendix shrunken and adherent behind cecum.	Entirely relieved. Gained thi pounds.
23	G. E. S.	33	Feb. 9, 1895.	First attack three years ago. Since then many attacks not counted.	Appendix thickened and bound down by short meso-appendix.	Entire and lasting relief.
24	J. McF.	35	Feb. 15, 1895.	Doubtful attack fifteen years ago. Second attack in Jan., 1895.	Appendix thickened, twisted beneath cecum and adherent there.	Not heard from.
25	J. C.	33	Feb. 15, 1895.	First attack in April, 1894. Second severe attack in Jan., 1895.	Appendix doubled on itself and held by adhesions. Calibre partly obliterated.	Immediate relief of dragging comfort.
26	W. C. C.	29	March 1, 1895.	First attack twelve years ago. Second attack five months ago. Since then about one a month.	Appendix tied by adhesions beneath the cecum.	Not heard from.
27	F. O. H.	33	March 1, 1895.	Two slight attacks in 1894. Severe attack in Jan., 1895.	Appendix adherent beneath caput coli and twisted on itself. Cheesy remains of pus about meso-appendix.	April 4, 1895 writes of better hea than for years. Weight grea then ever before and still incre ing at the rate of one pound a d
28	A. F.	20	March 25, 1895.	First attack in Nov., 1894.	Appendix retrocecal. Held by adhesions, with dilated extremity.	Wholly relieved.
29	Kate L.	25	April 25, 1895.	Two attacks in Jan. and Feb.	Appendix long. Some adhesion about cecum.	Relieved.
30	A. F.	22	May 24, 1895.	One previous attack. Operation during an attack of moderate severity.	Appendix doubled on itself and bound down by adhesions.	Wholly relieved.
31	Miss E. F.	24	May 8, 1895.	One or two a year, since eleven years old.	Somewhat thickened appendix. Short meso-appendix. A few adhesions about the cecum.	Been perfectly well and gai twenty pounds.
32	D. G. E.	21	June 22, 1895.	Three attacks in past year. Two of them lasted about ten days.	Adherent and distorted appendix.	Wholly relieved.

same time numbness of the left arm was noticed, with some impairment of motion. This latter condition continued and increased until the arm was almost entirely helpless. The right arm and both legs also became involved, never in as marked a degree as the left arm, but enough to make motion unassisted in bed, impossible. At one time there was some difficulty in swallowing, and for some time the breathing was almost entirely diaphargmatic.

The patient's condition remained about the same for two months, after which there was a slow but steady improvement, so that at the end of the third month she was able to sit up for a short time each day, and in December, five months from the onset of the trouble, she was able to move about with but little assistance, and was taken home. The paralytic symptoms referred to the right arm and the legs had by this time practically disappeared, but the left arm was still very helpless. The swelling in the neck was practically the same as when first noticed.

The patient was not again seen until thirteen months later, during which time, aside from the Thomas collar no special treatment had been carried out. At the time of this examination the improvement in the patient's general condition was most marked. She moved about with perfect ease; and, aside from the stiffness of the neck and some impairment in the use of the left arm, she seemed well. Extension of the neck was entirely restricted, so that in order to raise the chin the whole body was bent backward. Rotation was also entirely restricted, while flexion of the neck was nearly normal, it being possible to lower the chin to the chest. On each side of the neck, over the tranverse processes, was very distinct thickening, apparently bony in character.

In the left arm all motions were limited, especially those in which the shoulder muscles were used. The fingers were flexed, apparently due to contraction of the palmar fascia and the flexer tendons. The sensation of the arm and hand was normal.

At the present time the patient's condition is practically the same as at the time of this last note. She is able to be about at her work, but there has been no change in the condition of the neck or the arm.

In commenting upon such a case the chief interest lies in the diagnosis. Certain conditions can be eliminated at once or in a short time while with others positive differentiation is difficult or impossible. The fact that other joints are not involved, together with the effect of the salicylates, makes it easy to rule out acute rheumatism, while the history of the onset, this condition developing so rapidly, makes the chronic rheumatisms improbable. The simple "crick" is rarely so severe and is well in a few days. Caries of the cervical spine developing after middle life is very rare; so that, while this may not be put aside entirely, it is improbable. The chief difficulty lies in differentiating osteo-arthritis from malignant disease; and this at times is impossible until after the lapse of considerable time. In the present case the positive diagnosis was not made until the improvement commenced. The history of the onset, if this can be depended upon, is at least suggestive; but the character of the pain is probably of as much importance as any one symptom. In malignant disease the pain is, as a rule, much more severe and more constant than in the bone inflammations, and fixation or drugs (aside from morphia) have no effect upon it.

The treatment of osteo-arthritis of the spine is largely palliative. Absolute quiet for the affected part is of first importance and for this purpose splints, bandages and various forms of apparatus are of use. In certain portions of the body extension can be employed to advantage to control the muscular spasm. Local heat is also of benefit. Drugs, aside from making the patient more comfortable, are of little use.

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CLINICAL NOTES OF CATARACT PATIENTS.

BY DAVID COGGIN, M.D., SALEM, MASS.

DISLOCATION DOWNWARDS OF A CATARACTOUS LENS WITH NORMAL VISION.

Mr. W., forty, accountant, February 16, 1877. Was sent from a life insurance office because of poor vision of his left eye ($\frac{1}{10}$ and $\frac{4}{4}$, right). Incipient cataract, left, with fluid vitreous and floating opacities.

April, 1888. Mature cataract, left. With a cylindrical glass from an optician, vision = $\frac{6}{6}$, right eye. Cataract forming.

Christmas, 1889. Last evening suddenly observed "stars," and saw surrounding objects with his blind (left) eye. The opaque lens was found to be dislocated downwards, rising and falling with the movements of the eye. No pain or redness.

Later he sought his optician, who gave him a lens with which, one month ago, his vision was normal, or $\frac{6}{6}$. The upper edge of the cataract could be seen behind the lower border of the pupil. No pain or discomfort was complained of. The cataract of his right eye had so far advanced that he could count fingers only, half a metre off.

RUPTURE OF A PUPILLARY MEMBRANE AFTER REMOVING A CATARACT.

Miss S., sixty, April 1, 1877. Extraction of cataract from her left eye (Graefe modified). Healing process normal. Discharged from the Salem Hospital May 2d with a delicate membrane which prevented clear vision. Six weeks later, on examining the eye previous to performing a double-needle operation, it was found that a spontaneous rupture of the membrane had occurred, so it was necessary only to order the glass with which she could see well.

HEMORRHAGE AFTER EXTRACTION OF A CATARACT.

Mr. M., sixty-seven, master mechanic, September 9, 1880. Left eye lost, owing to an accident four years before. Mature cataract of the right. Patient timid, and insisted on inhaling ether, under the influence of which he came slowly and with considerable excitement. Lens apparently adherent inferiorly, so it was extracted with a scoop. Loss of a moderate amount of fluid vitreous. Scarcely any hemorrhage had accompanied the iridectomy. Half an hour later the eye looked well, the patient had about recovered consciousness, and the knit bandage was applied. On visiting him in the evening the dressings were found saturated with blood. He had vomited, or retched, most of the afternoon. The lips of the wound were separated by a firm clot of blood which was removed and the band was reapplied.

But little pain was complained of during the healing process. There was a good anterior chamber, a closed pupil, perception of light and no atrophy of the eyeball. No attempt was made later to improve the man's vision (which, very likely, would have been unsuccessful), as he became insane and died shortly afterwards.

SPONTANEOUS EXPULSION OF CATARACTS, LOSS OF VITREOUS; GOOD VISUAL RESULTS.

W. H. P., forty-nine, master machinist, February 28, 1884. Cataract, right eye, six years. No ether. Section above. Patient steady. After lacerating the capsule the lens was suddenly extruded and with it a considerable amount of fluid vitreous, after which some normal vitreoús protruded, which was excised. Healing process retarded, but the final result was good — vision being $\frac{4}{5}$ of normal.

January 18, 1888. Having seen to make a cart with his right eye, he wished to have his left one operated upon. Cocaine and pilocarpine anesthesia. Incision superiorly, with a small iridectomy as previously. Remembering how violently the cataract had escaped from the right eye, precautions were taken this time to prevent a recurrence of the same casualty. After making the iridectomy and incising the capsule and while reaching for a bit of linen, the lens was abruptly ejected (as from a catapult) landing on the lower lid. Vitreous gushed from the gaping corneal incision. Vision was $\frac{4}{18}$ on the 6th of February, when he was sent home.

MORSEL OF HORNBLENDE IN THE LENS, SIMULATING STEEL.

G. T., thirty-one, foreman of quarry, December 12, 1892. While overseeing a workman, standing two feet away, he felt something strike his right eye, which was followed by a trickling of water. When seen by me a few hours later, there was a perforating wound of the cornea at the equator, on the nasal border of the pupil, through which iris tissue protruded. No blood to speak of within the eye. Lens becoming cloudy. On its surface there was the appearance of a particle of steel about two millimetres in diameter. It made no advance towards Dr. Bradford's magnet, however. Atropine was ordered, a flannel bandage applied, and the patient went home.

December 17th. Had no pain. Corneal wound closed. Prolapsed iris had disappeared within the anterior chamber. Cataractous lens beginning to dissolve, showing more clearly the foreign body.

December 27th. Had pain but once. Pupil regularly dilated. Lens quite opaque, apparently. Cocaine and sublimate. Linear incision with keratome. The foreign body (extracted with forceps) proved to be a particle of syenite about four millimetres in length, on the presenting end of which was the bit of hornblende that so resembled a fragment of steel! Only a thin layer of the front of the lens had become opaque so the patient was again sent home.

February 9th. With Teele's suction tube, removed the balance of the cataract.

Later, with a lens, his vision was $\frac{4}{4}$, being better than that of the left eye owing to the presence of an old cicatrix on the cornea of the latter. The right pupil was round and the point of entrance of the bit of stone could barely be recognized.

COLLAPSE OF CORNEA AFTER AN EXTRACTION.

E. S., seventy-six, book-keeper, October 15, 1894. Left eye lost twenty-five years ago after a cataract extraction. Vision of right, $\frac{1}{12}$. Lens becoming opaque.

February 2, 1895. Small iridectomy upward, preliminary to an extraction (and Förster's procedure).

March 9th. Removed the cataract. As it escaped through the incision, the very tenuous cornea collapsed, rising and falling as the patient breathed, or so it seemed. As on two or three previous occasions the thinned cornea had become sunken and wrinkled in the same manner at the time of the operation, and as the visual result was ultimately good, this eye was bandaged with hope. It was examined five days later, and found to present a normal appearance so far as the healing process was concerned. Subsequently, with his temporary glasses, his vision was $\frac{5}{12}$ of normal and he read the smallest Snellen type (0.5).

The experience of Dr. Derby in removing cataracts from the eyes of extremely old patients (see JOURNAL, September 26th) is most interesting. My own is more limited and mainly with younger people, though it accords with his.

In over a score in whom the age varied from seventy-five to eighty-eight, each one had useful vision.

In this connection it may not seem irrelevant to say a word in favor of home treatment when it is practicable. Most of these old patients lived within a radius of fifteen miles, thus they were able to undergo treatment in the midst of a familiar environment. Surrounded by members of the family circle, the days of confinement must have seemed less irksome and a favorable result was more likely to follow than if they had been treated at a distance from home and attended by strangers for two or three weeks. The case of an old lady of eighty, at the Salem Hospital a few years ago, who was found beneath her bed groping for something two hours after having had a cataract removed, is an illustration of this. She was sent to her home a fortnight later with good vision, however.

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Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., BOSTON.

SUB-CONJUNCTIVAL INJECTIONS.

Marti,[1] in a dissertation upon sub-conjunctival injections, begins with a review of all the writings on the subject since the year 1866, when Rothmund, of Munich, recommended subcutaneous injections of common salt as a means of promoting the clearing of corneal opacities. In the clinic of Professor Schiess of Basle, the use of sublimate injections was begun in 1892, and gave, especially in the cases of hypopyon keratitis, satisfactory results, but was attended with much pain, and the production of inflammatory adhesions of the conjunctiva to the sclera in the region of the injection. Mellinger found, on experimenting with rabbits, that if the sublimate solutions were reduced to a strength of 1 to 4,000, no such results occurred. He, therefore, adopted the latter strength in treating the human eye.

The success obtained with this extremely dilute sublimate solution suggested the probability that it was rather the fluid than the disinfectant that was the efficient agent. Experiments in which a normal solution of common salt was substituted for the sublimate solution appeared to confirm this idea. Stronger solutions up to four per cent. appeared to answer still better.

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[1] Inaugural Dissertation, Basle, 1894; Ophthalmic Review, July, 1895.

Since December, 1893, these salt solutions have been employed to the exclusion of the sublimate. The cases treated were chiefly those of destructive corneal ulceration. It is to be noted that the sub-conjunctival injections were not used as a substitute for the well-established treatment by atropine and hot fomentation, but in conjunction with it. Mellinger's conclusions, as formulated in Marti's dissertation, are as follows:

(1) Sub-conjunctival sublimate injections act favorably upon destructive corneal ulceration, but lead to adhesive inflammation and obliteration of the sub-conjunctival space.

(2) Sub-conjunctival salt injections render service of at least equal value, without the disadvantages of sublimate injections.

(3) The good results obtained by sub-conjunctival injections depend not upon a disinfecting action of the solution, but upon its quickening influence on the lymph circulation.

(4) The quickening of the lymph circulation causes a quicker absorption and elimination of the noxious material and thereby hastens the healing process.

(5) According to the experiments of Heidenhain common salt is among the most active of the substances which accelerate the flow of lymph; there is, therefore, a reasonable explanation of the good results which have been clinically observed.

OCULAR TROUBLES OF BICYCLE RIDERS.

Duboys[2] reports a case of a professional rider, twenty-four years of age, who was attacked with a peculiar visual disturbance during a twenty-four hours' race made in very cold weather. About the eighteenth hour he noticed that his vision was disturbed, that he steered badly and that he ran into other machines. Dr. Duboys found a diffuse disturbance of both corneæ without superficial lesion. He prescribed warm lotions and rest. The same evening the vision commenced to improve; the next day the corneæ had regained their normal appearance and the vision had its usual acuity. This trouble, according to the author, was due to the cold. It is interesting to note that in the race in question, the thermometer sank to 10° below zero, Centigrade. It is to be noticed that during the entire race there was a corps of pace-makers, who broke the force of the wind for the racers.

Clavelier[3] gives an account of a man thirty-two years of age, who had ridden a race of twelve kilometres in which a very rapid pace was taken in the last four. He was seized with severe palpitations, which had scarcely terminated when there was a sudden diminution of vision of the left eye, falling to one-fourth, while the right eye remained normal.

Ophthalmoscopic examination showed traces of numerous hemorrhages.

Examination of the heart was negative, and the urine perfectly normal. There was no rheumatic, syphilitic, or alcoholic history; no anemia, and no lesions of the digestive organs. The evident cause of the hemorrhages was, then, the bicycle race.

MUSCÆ.

Gould,[4] in an article upon muscæ, advocates a new theory as to their location, and says that with a slight upward movement of the eye the particles can be seen to jerk upwards, and then if the gaze is kept steady to slowly fall by gravity out of sight in the dark parts of the chamber, and that this fact necessarily locates the chamber in front of the vertical equator of the eye. If the chamber were posterior to the equator, an upward glance would throw the particles downward, and he asserts that they must necessarily be in what he calls the aqueo-vitreous chamber, by which he means a narrow space between the vitreous body and the posterior surface of the lens, and maintains that because such a chamber has not been described by anatomists does not prove its non-existence, as the mere fact of opening the globe would destroy the space and the extremely thin film of liquid would disappear.

ERYTHROPSIA.

Fuchs,[5] noticed on climbing a high snow-covered mountain that when he entered a hut erected on the top, everything appeared red. This suggested a series of experiments which seemed to show that in order to elicit the erythropsia in the normal eye, it is necessary to expose it for some length of time to the glare of the snow upon which the sun is shining, and that this was still more quickly accomplished if cataract cases were exposed to a reflection of light from the snow.

As a result of his experiments, he states that the erythropsia of normal eyes, as well as of eyes deprived of their lenses, is caused by dazzling, which need not be disagreebly strong, but must be of long duration. Exposure to sunlight reflected by snow is the most effective means of producing it. For most eyes, however, it is necessary that the dazzling shall take place high above the level of the sea, where the sunlight is stronger and also richer in short waved rays. He found by trial that the phenomenon was produced on patients who had been operated on for cataract, without regard to elevation above the sea-level. He draws attention to the fact that the color of the erythropsia is exactly like the color of the retinal purple, also that the erythropsia is, as a rule, less pronounced or entirely absent in the part of the field of vision which corresponds to the macula lutea, and thinks that by long exposure to strong light the retinal purple is bleached and the retina becomes uncolored, and that phenomenon is seen during the re-establishment of the retinal purple.

HYDRAULIC CURETTING OF THE CORNEA.

Santarnecchi[6] says that 70 per cent. of ocular diseases are lesions of the cornea, and that they are those which compromise the integrity of the visual organ most severely, and that their treatment should be assigned the first place in all ophthalmic literature. He says that actual cautery, which not long ago seemed destined to supplant Saemisch's operation, seems destined to be given up after further experience, because it destroys healthy tissue together with the neighboring infected tissue and leaves a dense, white leucoma upon the healing of the wound. His method of procedure in cases of sloughing ulcers of the cornea he calls hydraulic curetting, which is nothing more nor less than syringing the ulcer with Anel's syringe, employing the large point which gives a filiform jet that is energetic enough to detach the portions of dead tissue which cover the fundus of the ulcerations. This is done under cocaine, the force of the stream being increased progressively until the last portion of adherent tissue is removed. When nothing more can be detached, the operation is stopped and a protective bandage is applied.

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[2] Annales d'Oculistique, April, 1895.

[3] Archiv. Med. de Toulouse, April, 1895; Annales d'Oculistique, August, 1895.

[4] Medical News, September 14, 1895.

[5] Ophthalmic Review, August, 1895.

[6] Annales d'Oculistique, September, 1895.

The immediate reaction following this method of treatment is insignificant. The parts of the cornea which were transparent become gray, but this cloudiness disappears in a few hours. The results are quite surprising: suppression of pain and photophobia with clearing up of the portions of the cornea surrounding the ulcers with greater rapidity than with any other method, and the repair is by a tissue which is frequently non-cicatricial, and capable of resuming its transparancy so as to leave no trace of the lesion.

(*To be continued.*)

Reports of Societies.

BOSTON MEDICO-PSYCHOLOGICAL SOCIETY.

H. C. BALDWIN, M.D., SECRETARY.

MEETING of November 21, 1894, DR. C. F. FOLSOM in the chair.

DR. G. L. WALTON read a paper entitled

MULTIPLE NEURITIS THE ESSENTIAL ELEMENT IN LANDRY'S PARALYSIS.[1]

DR. J. J. PUTNAM spoke of several cases which might be classified as Landry's paralysis, which had come under his observation. One case had been reported with autopsy, under the heading of acute fatal neuritis. In the first case, followed by death on the ninth day, leucocytes were found about the vessels of the brachial nerves of the left side, and much swelling of the axis cylinders. Similar conditions were found in the anterior crural nerve, though they were less marked. Healthy nerve fibres were found adjacent to diseased fibres, if swelling can be called disease. He should be inclined to agree with Dr. Walton's views with regard to the close analogy of the Landry symptom-complex to that of multiple neuritis; but multiple neuritis is itself a complicated matter, and it would seem to him more rational to preserve a name like Landry's paralysis, as identifying a class with a definite symptomatology, rather than limit ourselves to a term supposed to indicate the pathology. He alluded to the fact that the brain and spinal cord showed changes in neuritis, as in Landry's paralysis. In his own case the spinal cord was slightly involved, the axis cylinders in the lateral tracts being very much swollen here and there. As regards the etiology, the symptoms certainly occur under various conditions, but it is possible that the real causes are fewer in number, and this is the direction in which we ought to search. In one case the onset was preceded by a ride on the outside of a horse-car on a wet and cold night. In another case, that of a young girl, no exciting cause even was found.

In regard to the bacteriological findings, no particular reliance can be placed on the discovery of bacteria in small number, as in Centanni's case. In fact it is probable, or possible, that no characteristic bacteria will ever be found, the process being perhaps the result of a toxin or ptomaine poisoning. Even in cases where pathological changes are found, the symptoms may be due not to them but to the direct action of the poison on the nerves or nerve-centres. It is probably this which gives the disease its characteristic stamp.

DR. W. N. BULLARD: A certain number of these cases are probably multiple neuritis, that is, the pathological condition is not the same as regards location; at least, in all cases of Landry's paralysis the main lesion is in the nerves. Some lesion occurs in the cord also in most cases, and in some the main lesion is found in the cord. Is the disease a distinct entity? I am not yet convinced that all the cases have the same pathology or the same etiology. The trouble is probably generally toxic; as far as our present knowledge goes, more probably the result of ptomaines than of bacteria. It is hard, however, to see how exposure to cold can generate ptomaines.

DR. A. H. HARRINGTON reported a case. The patient was not insane, but irritable, during the onset of the symptoms. He appeared hysterical, and had been regarded as feigning. He was sent to the Danvers Lunatic Hospital on the ninth day, after having thrown a cup at some one. There was history of malaria, and a question of syphilis. Paresis of the lower limbs was present. He died four days later with the classical symptoms of Landry's paralysis. The brain and spinal cord were removed, and the latter was examined by Dr. M. Allan Starr, who reported moderate congestion of the gray matter of the cord. There was numbness and tingling in the extremities, and the onset was accompanied by great pain in the back. The electrical reactions were not tried. He died from paralysis of respiration.

DR. MORTON PRINCE: The subject is one of extreme interest. We must know more about it before absolutely establishing its class. I agree with Dr. Walton that it would be better to take Landry's paralysis out of the spinal diseases, but it is a partial view to simply call it a neuritis, because its pathology is more extensive than this would imply. Statistics are misleading, for many cases of multiple neuritis have been reported as Landry's paralysis; and if these are included in the statistics, it is reasoning in a circle to prove the disease neuritis by such statistics. Unquestionably many cases of multiple neuritis have been reported as Landry's paralysis, but this does not make them such, and such statistics give erroneous symptom-pictures. There is no doubt about this case being neuritis, Dr. Prince having satisfied himself upon this point by a recent examination of the patient while at the City Hospital. He has seen another case, about which the classification was uncertain. The general course of the disease, which ended in recovery, was that of neuritis, but there was no sensory disturbance, pain, tenderness nor anesthesia; the muscles were flaccid in the extreme, but showed no electrical degeneration, except in a few fibres of the vastus internus, at a time when this feature should appear. Dr. George B. Shattuck was inclined to call the case neuritis, Dr. Prince to regard it a case of Landry. Which was it? If this case and that of Dr. Walton were grouped together in a classification of either Landry's paralysis or simple multiple neuritis, the symptom-pictures, as made up by such statistics, would be affected. That multiple neuritis may suddenly develop in Landry's paralysis has been proved to be true. This is only a partial view. The same is true of other diseases.

Beri-beri results in a multiple neuritis, but it is not fair to call it a neuritis alone. The same is true of diphtheritic paralysis. It is better to compare the primary disturbance to a paralysis resulting from a poison like curare, and other chemical poisons, which have a special action on the motor nervous elements, and may lead to inflammatory changes in the cord and nerves. Although Landry's paralysis leads secondarily to neuritis, it follows a certain type, it is very fatal and has special characteristics. Poliomyelitis has actually been found; and to classify the disease under multiple neuritis is like calling all membraneous sore throats diphtheria. Such membrane may reveal either streptococcus, staphylococcus or the Klebs-Löffler bacillus, the course of the disease varying according to the poison. It is better to keep Landry's paralysis as a distinct clinical entity for the present, but to bear in mind the anatomical changes that may be present.

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[1] See page 637 of the Journal.

Dr. Prince also showed sections of spinal cord and nerves taken from a case twelve hours after death. No abnormality was apparent in either.

Dr. Courtney thought the term "ascending paralysis" should be dropped, as the course of the disease did not always justify this description. He would prefer retaining the name Landry's paralysis.

Dr. P. C. Knapp: Dr. Walton speaks of the possible disappearance of the term Landry's paralysis as a designation of a special disease. It is a curious fact that, on looking through the files of nine of the leading neurological journals, extending back over periods of from three to ten years, I have found no article on Landry's paralysis, nor, in a tolerably well-stocked library have I any monogram or reprint except Dr. Hun's paper, so that the literature is not very extensive, and it is to be found chiefly in the general journals. Many cases have undoubtedly been called Landry's paralysis, which do not fill the requirements, nor present the characteristic symptoms. Dr. Sanger Brown reported a case, where in addition to an acute ascending paralysis, there were ataxia, increased knee-jerks and diminution of tactile and thermal sensibility, which helped to support Carter's hypothesis that a chill might cause dropsy of the central canal of the cord and give rise to the symptoms. Hun has attempted to define the symptoms more exactly, and to exclude all cases where there were no bulbar symptoms, and where there were sensory disturbances. If we adopt such restrictions, we must exclude many of Ross's 93 cases. That many of the reported cases of Landry's paralysis are really cases of multiple neuritis must be admitted; but we must also admit that there are many cases, presenting the typical symptoms as given by Landry, which are not multiple neuritis, and in which the autopsy shows no lesion of the peripheral nerves. Out of 24 autopsies which I have collected the nerves were affected in only 9, and the cord in 15, and in many of the cases in which there were cord lesions the nerves were found to be normal. The clinical history of the cases, too, is not like that of neuritis, for it is certainly very rare to find neuritis with bulbar symptoms and without sensory symptoms. It seems to me that Landry's paralysis must be regarded as due to some toxin, or perhaps to some bacillus, although Centanni's special bacillus has not been found by late observers. It may act somewhat like lead, only more acutely. There has been much dispute as to whether the lesion in lead was in the peripheral nerves or in the cord, changes being found in both regions, but the recent work of Stieglitz renders it probable that lead attacks the whole peripheral or centro-muscular motor neuron. The visible changes from the poison are usually first manifest in the part of the neuron most remote from the muscles, the axis-cylinder of the nerve, and later in the cell itself. The earlier changes may appear in other equally remote parts of the neuron, the collaterals in the cord rather than the fibres of the peripheral nerve. It is possible that this unknown toxin has a similar action. We are not, at any rate, in the light of the autopsies justified in adopting Ross's sweeping assertion that all cases of Landry's paralysis are nothing but multiple neuritis.

Dr. F. B. Harrington said that he at first believed that the patient's nervous trouble, including the difficulty in passing water, was the result of the apprehension accompanying the kidney disease. On looking back, however, he realized that the nervous system was itself involved. No local disturbance beyond the discharge remained after the removal of the calculi. The patient was anxious to have the remains of the kidney removed, but taking into consideration the doubt whether the sinus had anything to do with the paralysis, and the possibility that this operation might set him back, it was not undertaken.

Dr. Prince alluded to a case which followed a false passage in the urethra.

Dr. Bullard was reminded of a case of spinal disease with a similar kidney complication, which he regarded as merely coincident, though he would not commit himself to this view in the case under discussion.

Dr. Putnam: I hardly see the advantage of classifying the disease at all at present, even though it has many symptoms in common with neuritis.

Dr. E. W. Taylor reported a case in which marked affection of the cranial nerves was present. There was double facial paralysis and probable implication of the hypoglossal and glosso-pharyngeal nerves. The electrical reactions to faradism were slightly impaired. Dr. Putnam considered the case one of multiple neuritis. The autopsy was unsatisfactory on account of the lapse of time. Bacteria were found, but they were evidently the result of putrefaction. There was, however, enlargement of the spleen, and sufficient distinctive features were present to point to an acute infective process of some sort.

Dr. Walton: I coincide fully with the prevailing sentiment of the meeting, that the disease is not to be regarded as a neuritis simply. As indicated in the paper, I would by no means overlook the implication of the cord, nor that of the brain in the toxic process, especially at the onset. If I supposed this complication would be forgotten in classifying the disease under neuritis, I should by no means favor this course; but as Dr. Putnam has reminded us, however, in every case of neuritis we must bear the fact in mind, that the process is not a simple one, and I do not see that the danger of our forgetting this fact is greater here than elsewhere. It does seem that we have a sufficiently well-marked group of cases, clinically, to justify our placing them together, and it appears to me that the essential features of the disease warrant us in classifying it under neuritis, rather than under diseases of the cord, the latter plan being open not only to the objection already stated, but also to that of calling attention to an organ which does not, probably, represent the chief seat of trouble, at least after the initial effects of the poison have passed away.

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ANNUS MEDICUS, MDCCCXCV.

The year just closing has not been marked by great medical discoveries, but by steady and substantial progress, for the most part along lines already laid down. Sero-therapy and particularly that of diphtheria, has overshadowed all other subjects in medical thought. The results of the extensive, almost universal trial given to the antitoxin treatment will be discussed under that special heading. Suffice it to say here, that our prophecy of last year has been in the main justified, and our expectations realized. The good, however, which has been accomplished by sero-therapy has not been unmixed with evil. As is unavoidably the case where any really new and beneficent discovery is first adopted, hasty reasoning, the commercial spirit, and desire for notoriety, have led to the publication of results of wrong and unscientific applications of the treatment to various diseases. Time and the good sense of the medical profession will eliminate the false from the true in sero-therapy as in other departments of medicine.

The same statements may be made with regard to organo-therapy, from which quackery and the advertising spirit have attempted to profit. The untrustworthiness and falsity of such pretensions have been in general easy to expose. In this department activity has been manifested during the year in the treatment of myxedema by the extract of the thyroid gland, and of exophthalmic goitre by thymus extract.

During the year death has deprived the medical profession of two of its veritable leaders, Pasteur and Ludwig; one of whom may justly be called the founder of the rational application of sero-therapeutics, and the other of the modern school of physiologists, both taking the highest rank as benefactors of mankind. Surgery has lost leaders in the death of Thiersch and Von Bardeleben in Germany, and Thomas Keith in England; medicine in that of Loomis, of New York.

EPIDEMICS.

Cholera. — Although during 1895 cholera was prevented from gaining a foothold anywhere in Eastern Europe, the story or the year shows that it is constantly smouldering wherever in either hemisphere dirt and barbarism give it an opportunity, and is ready to invade our shores from unexpected quarters; as shown by the history of our Pacific quarantine this fall. Brought to Japan by the troops returning from China, the disease was carried at once to Honolulu, and from there narrowly escaped being brought into this country.

It will be remembered that during the latter part of 1895 cholera was epidemic in Turkey, and that in the interior provinces of Russia it held its foothold. There was a mild epidemic also on this continent in southern Brazil, along the borders of the Argentine Republic, and in Uraguay. Through January numerous cases appeared in Constantinople. In that ill-governed city few and insufficient precautions were taken. Cases were frequently not reported to avoid disinfection, and this when performed at all was performed insufficiently. During the winter the disease broke out in various parts of Asiatic Turkey, the primitive measures adopted by the Turkish Government, consisting of sanitary cordons and a short quarantine of suspected cases, operating in such a manner as to paralyze trade without preventing the spread of cholera. In March there were six infectious diseases working wide-spread havoc in Constantinople; namely, cholera, small-pox, measles, whooping cough, influenza and diphtheria.

In Brazil and the Argentine Republic, however, the efforts of the health authorities were well planned and effective. Careful inspections were made of all railway trains coming from the infected districts, and hospitals were established for the isolation of suspected cases. By March the disease in Brazil was confined to the valley of the Parahyba River, a small stream flowing parallel to the coast just inland of Rio di Janiero, the waters of which were found to be infected. During April and May cholera in Brazil gradually died out, or succumbed to the vigilance of the health authorities.

With regard to the Meccan pilgrimage, the signal success of the sanitary measures for the care of pilgrims adopted by the International Sanitary Conference for 1894 was unfortunately not repeated this year. Either because the failure of cholera to appear in the Hedjaz during the preceding year had induced the authorities to relax their vigilance, or because the precautions which were successful last year were insufficient this year, an outbreak of cholera began on March 24th at the lazaretto of Camaran, the island in the Red Sea where pilgrims coming from Asiatic parts — India, Persia, Java, etc. — have to undergo ten or more days quarantine. The disease was introduced by two steamship-loads of pilgrims from Bombay, where, strange to say, cholera cases were at that time very rare. This fact tends to show that under favoring circumstances a single case of cholera may be the source of a wide-spread epidemic, and makes it seem more probable that a less careful inspection of pilgrims at their ports of embarkation was carried out this year than in 1895. It is known that the regulations with regard to the number of pilgrims which each ship was entitled to carry were not enforced, nor were the prescribed number of latrines provided. The quarantine station at Camaran presented serious defects, the sanitary conditions being imperfect, and the water-supply impure. Later in the year this station instead of a quarantine for the arrest of cholera, became a veritable depot for its spread, as in due time a destructive epidemic appeared in the Hedjaz.

It is interesting to note the number of times cholera has broken out in the Hedjaz since the year 1817. From 1817 up to 1866, that is to say, during forty-five years, two epidemics only occurred in Mecca; these were in the years 1831 and 1865. In the year 1872 a sanitary service was established at the Hedjaz, and sanitary physicians were also appointed at the ports. Since this latter date, 1872, and up to 1881, two more epidemics broke out, the first was in the year 1872, and the second in the year 1877. In the year 1881 the lazaretto of Camaran was established, where, as already mentioned, all the pilgrims coming from southward have to undergo quarantine, and which lazaretto can accommodate from 4,000 to 5,000 pilgrims. Since the establishment of this lazaretto (1881), cholera has broken out at Mecca and throughout the Hedjaz seven times, that is, in 1881, 1882, 1883, 1890, 1891, 1892, 1893, and the present year did not prove an exception. It must not be forgotten that the number of pilgrims is without comparison larger now than it used to be during the first half of the century.

The first case to occur in Mecca was in a woman who had arrived from the Cape of Good Hope, the second a pilgrim from Morocco, and the third victim was an arrival from the Soudan. By May 5th there had been 209 cases in the Hedjaz, all of which proved fatal, and 85 cases with 72 deaths at the Camaran quarantine. At this time only 27,000 pilgrims of the 300,000 to 400,000 who annually go to the holy city had arrived in the Hedjaz, and the prospect of a serious epidemic had to be faced. The Turkish government, which had failed to follow the example of France, Russia and Persia, and forbid the pilgrimage, although urged to do so by the International Sanitary Commission, began to take tardy steps to prevent the spread of the evil on the return of the pilgrims from Mecca. Two sanitary physicians were assigned to duty at the quarantine station at El Tor, and two were sent to Jeddah to watch the pilgrims on their return from the Hedjaz.

Precautions were adopted to prevent the overcrowding of the vessels by which the pilgrims were to return from Jeddah to El Tor, and efforts were made to prevent the assembling of large numbers of pilgrims at Jeddah. This can hardly have helped matters much, as the pilgrims were thereby obliged to remain longer at Mecca where the epidemic was in full force. During June and July, however, the epidemic at Mecca declined somewhat, although at the same time it spread to other towns in the Hedjaz. On June 11th the first departure of pilgrims to the north took place, and the quarantine at El Tor is believed to have prevented the spread of the disease from this source into Turkey, although a number of cases occurred among the pilgrims detained at this place, and the disease spread to Damietta where a rather severe outbreak occurred, and to Egyptian ports in the Red Sea.

During May cholera at Constantinople gradually died out, but in the provinces of Asiatic Turkey, and at seaports on the Mediterranean, such as Adalia and Tarsus, and throughout Syria it prevailed with great severity. In the province of Aleppo a severe epidemic occurred at Marash, and in Adana there was also a severe, persistent epidemic. The sanitary cordons, etc., enforced by the Turkish government were entirely ineffective in limiting the disease. Toward the end of October it was dying out in the Turkish provinces, but still prevalent at Damietta and in Egyptian ports on the Red Sea.

In Russia the province of Volhynia was the seat of an epidemic which raged with severity all through the spring and summer. Between July 6th and 20th there were 214 cases and 85 deaths, and from July 2d to August 3d, 688 cases and 238 deaths. The epidemic was, however, limited practically to this province, except for a few cases in Podolia during the early spring, and although it lies upon the frontier of Austria-Hungary, an extension into the latter country was limited by the sanitary precautions taken by the Austrian government to a few cases which occurred in Galicia in August. During October and November a few cases occurred in Galicia, but in Volhynia cholera was increasing and had appeared in Podolia and Kieff. The German frontier was carefully guarded, and during 1895 no cases of cholera appeared in the German empire.

Another epidemic of cholera occurred in a far-distant quarter of the world this year, which is of great interest at this time as proving a direct menace to this country, and as an example of the evils that war brings in its train in semi-civilized countries.

The Japanese troops brought back cholera from Corea, Tien Tsin, Che Foo and other Chinese ports. It first appeared in March at Moji, a naval station, and at Nagasaki. By the returning troops it was soon widely distributed throughout the empire, invading every province. During the seven months following the outbreak it caused no less than 36,000 deaths and 52,000 cases, the mortality averaging 65 to 75 per cent. This wide distribution took place in spite of stringent measures adopted by the Japanese authorities under the direction of competent men trained in European schools, which did much to prevent the spread of the disease. Although it began to decline during October, there was in the region surrounding

Yokohama, a temporary increase. The latest reports in November show a slow but steady decrease.

On August 9th the steamer *Belgic* arrived at Honolulu with 538 Chinese and Japanese immigrants, having had three deaths during the voyage. Several of these immigrants soon died with acute gastro-intestinal symptoms, and the cases were found to be cholera.

By September 5th there had been 39 cases and 32 deaths. The *Belgic*, on leaving Honolulu, proceeded to San Francisco. On her arrival at quarantine she presented a clean bill of health and landed passengers. The next steamer from Honolulu brought the news of the cholera epidemic, and some alarm was felt lest the passengers from the *Belgic* should start an epidemic on the Pacific coast, but no such event occurred. By the end of October the epidemic at Honolulu had come to an end.

A careful inspection and disinfection of luggage is carried out by the Marine-Hospital Service at Yokohama for Honolulu and the United States, and the Pacific Coast quarantine stations have been constantly on the watch to prevent the entrance of cholera into this country.

In India, cholera has as usual, prevailed to a considerable extent, in an endemic form, throughout the year; and during the early autumn an epidemic occurred at Singapore, in the Malay Peninsula.

In Morocco there was a slight epidemic of cholera during September, but careful quarantine enforcement at Gibraltar prevented its entrance into Europe.

During October and November a few cases of cholera have appeared in St. Petersburg.

SMALL-POX.—The year began with small-pox widely diffused through the Middle and Western States, though the large cities have been much freer from this disease than last year. The manner in which the facilities of modern railway travel enable the disease to be carried to great distances, and the arrival of a single case in an unprotected community may start up a severe local epidemic has been well illustrated. Wherever small-pox has appeared, however, its disappearance has been prompt in proportion to the efficiency with which vaccination, isolation and disinfection have been carried out by the boards of health or other sanitary authorities. The efficiency of the Marine-Hospital Service has been again demonstrated by the protection of this country from two threatened invasions of small-pox across the Mexican frontiers of Arizona and Texas.

Of the large cities, Milwaukee, Chicago and Philadelphia were the only ones in which it prevailed to any extent. The opposition of the lower classes in Milwaukee to sanitary regulations, noted in the JOURNAL a year ago, was strong enough to secure the passage by the city council of an ordinance forbidding the removal of patients with small-pox from their homes to hospitals against their will. As a result, this disease was most persistent in Milwaukee and was rather extensively diffused through Wisconsin. Chicago also served as a centre for the distribution of small-pox. During the month of January there were 193 cases and 44 deaths in that city. New York was almost free from small-pox during the winter, while Philadelphia was subject to a mild epidemic. Between December 18, 1894, and March 16, 1895, there were 224 cases and 26 deaths in that city. Many cases occurred in the State of Pennsylvania, and through Illinois, Wisconsin, Ohio, Indiana and Missouri during the winter and spring. In February a sharp epidemic began at Little Rock, Ark. The disease was carried there by a man coming from Missouri, who was supposed to be suffering from eczema, and who died soon after his arrival. The undertaker who buried him and his assistants were the first to fall ill, and from this source an epidemic was started, which, between the time of its outbreak in February and April 22d, caused 194 cases and 44 deaths.

During the spring numerous cases of small-pox appeared in towns along the Ohio and Mississippi rivers, from West Virginia to New Orleans, appearing among the crews and roustabouts of the river steamers, and it was soon found that there was a widespread infection among the marine of the great valley. A compulsory vaccination was ordered in May by the Supervising Surgeon-General of the Marine-Hospital Service of all members of the crews of steamers who could not show satisfactory evidence of recent vaccination. Special sanitary inspectors were appointed for this purpose, and the work was efficiently carried out at all important ports from Wheeling to New Orleans. At St. Louis up to June 14th, 1,625 seamen were inspected and 505 vaccinated, 151 cases of variola being discovered. In New Orleans 2,500 vaccinations were made among the crews of the river steamers.

In July small-pox in New Orleans was decreasing.

In March small-pox was brought from Chicago to Newport, N. H., by a "walking" case, and a local epidemic of some twenty cases started. In April a few cases appeared in Connecticut.

During April and May small-pox was brought to Nogales, which it will be remembered is situated on the frontier of Arizona, lying partly in that State and partly in Mexico on the Sonora Railroad, from certain Mexican mining camps along that railroad where it was extremely prevalent, and where no precautions were taken to prevent its spread. Inspection and vaccination of north-bound passengers and disinfection of luggage was practised at Nogales, and though a considerable epidemic occurred in that town, no spread of the disease to the northward took place from that source.

The danger of the entrance of infectious disease from Mexico into this country was again emphasized during last summer, by a small-pox epidemic at Eagle Pass, Tex. The disease was brought to this frontier station by negro refugees, who had been earlier in this year induced by the agents of a certain commercial company to settle on their plantations in the State of Durango, Mexico, for the cultivation of corn and cotton. After a few months small-pox appeared among them, and they left the colony, travelling slowly in crowded freight cars; and after many vexatious delays about 300 of them arrived at Eagle Pass from July 23d to July 30th. The State authorities at first attempted to cope with the situation, but facilities were insufficient, even tents enough for the shelter of the sick could not be obtained, and in August the control of Camp Jenner was assumed by the Marine-Hospital Service. Tent hospitals and detention camps were established. Regular inspection, vaccination and isolation were enforced. The camp was open from August 11th to October 21st; 411 refugees were received, and 178 cases of small-pox treated, with 51 deaths. Considering the deplorable condition of the refugees on arrival, this was a very creditable record.

During the autumn small-pox has been much less prevalent than last year in the large cities throughout the country, and its general diffusion has been correspondingly less.

In the Western Continent small-pox has been constantly present on the island of Cuba, where the conditions of the war, the crowding of the country population into the towns for protection against the ravages of the soldiery, and the arrival of large numbers of unacclimated troops have favored in a marked degree the spread of infectious disease.

Throughout the interior towns of Northern Mexico, this disease has also prevailed.

In London, the prevalence of small-pox throughout the year has been less than the average except during the autumn months; and England and Scotland have been singularly free from the disease.

In Dublin, Ireland, a rather severe epidemic prevailed throughout last winter. The disease was allowed to spread for some time before the sanitary authorities took efficient action.

All through the year small-pox has prevailed in Constantinople, together with most of the other infectious diseases.

YELLOW FEVER.— Yellow fever has been unusually prevalent this year in the seaports of South America and the West Indies. The quarantine stations along our South Atlantic coast have performed efficient service in preventing its entrance into this country. The number of times it has been necessary to detain vessels coming from Brazil or the West Indies, either because there were cases of yellow fever on board or deaths had occurred during the voyage, has well shown the inestimable importance of our quarantine service to the public health and safety.

The sanitary conditions prevailing in Cuba have this year been particularly bad, owing to the unavoidable results of the insurrection. The large cities have been overcrowded with Spanish troops, who not being acclimatized, have fallen easy victims to yellow fever and small-pox. An insufficient water-supply has in many cases rendered proper cleanliness and sanitation absolutely impossible.

The height of the epidemic in Havana was reached in September. Between September 5th and 19th there were 210 cases and 67 deaths in that city. In Santiago de Cuba during July and the first seventeen days of August there were 259 deaths. During the autumn the disease has gradually declined, although owing to conditions due to the war the decline has been unusually slow.

On account of these conditions special vigilance was required of the authorities in regard to vessels arriving from Havana, and special percautions were taken. Health-officer Doty of New York was sent to Cuba in June to study the methods of discharging and loading cargoes at Cuban ports. A five days' quarantine was established at New York against all vessels arriving from Cuba, whether there had been yellow fever on board or not. Visits were made during the summer by an inspector of the Marine-Hospital Service to the principal cities throughout the island of Cuba, and reports of their sanitary conditions forwarded to Washington. All vessels arriving from Cuba during the summer were compelled to stop at southern quarantine stations.

At Rio this disease prevailed during February and March as usual, and during the spring months. It failed to abate as is commonly the case with the coming of the cooler weather of what is the southern autumn season. In March a severe epidemic broke out at Santos and continued through the spring.

In May and June, owing to the conditions previously noted as due to the war, a decided increase in the fever took place at Santiago de Cuba and Havana. Through the summer vessels arrived at the Gulf quarantine from Havana, having had yellow fever on board, and in August a case of yellow fever was brought from Havana to New York on the steamship *Seneca;* the case developing during the five days' quarantine to which the steamship was subjected. Vessels also arrived at South Atlantic stations having had yellow fever on board during their voyage.

During the summer a considerable epidemic took place at Vera Cruz, Mexico; but although isolated cases of the disease were unavoidably carried to numerous ports in the West Indies, South and Central America and Mexico, no other extensive outbreaks resulted.

THE PLAGUE.— Although the epidemic of plague in China this year did not compare in severity with that which last year devastated the city of Hong Kong, a considerable outbreak occurred in Foo Chow in the early spring, and later in the year the disease was quite generally distributed along the southern coast of the empire. Inasmuch as in a city like Foo Chow it was impossible to institute any sort of sanitary measures to prevent the spread of contagious diseases, it was at first feared that a serious epidemic among the million and a half inhabitants could not be avoided. The epidemic, however, for some reason ran its course rapidly, and was confined to a small section of the native city of Foo Chow.

The Chinese thought that the apparent abatement of the plague there was the result of a simple remedy or preventative discovered by them. But there was reason to believe that the plague was caused by natives who fled from the threatened attack of the Japanese on the ports lying farther down the coast, and that these fugitives were the principal victims of the disease they brought with them in their flight. The appearance at the same time of unmistakable cases of plague in Hong Kong and Madras made this view extremely probable.

The epidemic in Hong Kong, however, at no time assumed serious proportions, although a few cases occurred at the neighboring ports of the Kwangtung province. The severest outbreak occurred during June, at Amoy, when for a time about fifteen deaths a day from this cause were reported.

An epidemic of bubonic plague also occurred during May in the Yemen, in Southern Arabia, and many of the pilgrims to Mecca coming from the East were stricken. It was necessary for a time to establish a quarantine on this account against pilgrims arriving in the Hedjaz from the Yemen. Although this quarantine was of two days only, and was inefficiently carried out, on account of fear of rioting in case the pilgrims should arrive too late for certain sacrifices, no epidemic of plague occurred in the Hedjaz. From the above short account it will be seen that the two epidemics of plague which have occurred this year were mild and easily controlled, a fact, in view of the ravages of the same disease during the previous year at Hong Kong, which is difficult to explain.

TYPHOID FEVER. — Several epidemics of typhoid fever have occurred during the year, notably those at Stamford and New Milford, Conn., and Montclair, N. J., which are of interest as being traced to infected milk, the infection having been due in all three cases to washing the cans with water containing typhoid bacilli.

INFLUENZA. — Although there has been this year no pandemic of influenza, it, nevertheless, prevailed considerably during February and March in widely separated regions. In this country a form of influenza prevailed during the winter, the highest mortality being reached in February, when 42 deaths from this cause in New York City during the week ending the 23d of that month were reported. In New England during February and March, influenza also prevailed to a considerable extent. In Great Britain during the same months quite a severe epidemic took place, the mortality increasing rapidly with the age periods. Under the age of twenty it averaged 1.5 per thousand, and between the ages of sixty and eighty, 40.6 per thousand. In Constantinople influenza also prevailed during the spring months.

EPIDEMIC DISEASES AND WAR. — The extensive ravages of cholera in Japan this year have again called attention to the fact that the most fatal factor in war does not proceed from arms but from the epidemic diseases which almost always break out among large bodies of troops, especially if unacclimated in a foreign country. The same lesson has been repeated in the case of the Cuban insurrection by the experience of the Spanish troops, among whom yellow fever and small-pox have been extremely prevalent and fatal. Both of these outbreaks have been dangerous to other countries beside those involved in the conflict, and constant vigilance has been necessary to protect the United States.

MISCELLANY.

SERO-THERAPY IN DIPHTHERIA. — At the close of the year 1894, enough was known of the results of sero-therapy in diphtheria to justify the hope that at length a remedy had been found, and that not by empiric methods, but by close and careful application of scientific principles, which would markedly lessen the terrors of that universal scourge. Although the reports of the action of the remedy were generally favorable, and its effect upon statistics of mortality almost without exception good, many considerations, such as the well-known variations taking place from year to year in the severity of epidemics, and the absolutely small number of cases reported (we were then able to collect but 1,600), rendered necessary a suspension of final judgment as to the value of the remedy. Enough had been shown, however, as was stated in our review of a year ago, to render a fair and extended trial of the remedy imperative upon the profession.

The year just closing has, as was predicted, been one of the greatest activity and interest in diphtheria and in sero-therapy in general. Antitoxin plants have sprung up all over the world, some under State and municipal control, some established as the results of private charity, and others on a purely commercial basis. The products of the various establishments have necessarily varied greatly in proportion to the degree of knowledge, skill and care of those having them in charge; but it can be said in the main that those under State and municipal control have been placed in competent hands and issued a reliable product. Although the experience of the past year in the preparation and use of the antitoxin of diphtheria has been extensive, our knowledge of the dosage is incomplete, and the methods of measuring its strength crude and inaccurate. In spite of these drawbacks, however, the experience of the past year has greatly and justly increased confidence in the immense value of the remedy.

A most careful and thorough presentation of this subject was made last July by Welch of the Johns Hopkins University, Baltimore, and was published in the *Bulletin* of that institution for July and August. His statement, which is of value as based upon a thorough knowledge of the pathology and bacteriology of the disease, upon a considerable clinical experience, and the most careful collation of all the statistics which had been published up to the time of his writing, is that "the published testimony of those who have had the largest opportunity to study the therapeutic effects of antitoxin has been overwhelmingly in its favor." The most favorable expressions of opinion have come from such observers as Heubner, von Widerhofer, von Ranke Ganghofner, Escherich, Bokai and the physicians of the Hôpital des Enfants

Malades and Hôpital Trousseau in Paris. These observers had reported in detail at the time of publication of Welch's paper over 2,300 cases of diphtheria treated with antitoxin. More convincing than statistics to the clinical observers themselves, has been the observed effects of the antitoxin upon cases of severe disease, which according to previous experience would have terminated fatally, and more than anything else the reversion to the former high mortality when for some cause the supply of antitoxin has been temporarily cut off.

Yet as Welch justly says, general clinical impressions, convincing as they may be to the person receiving them, may not be equally convincing to others; and if antitoxin really exerts any specific curative action in diphtheria this must be apparent in the fatality statistics of the disease. Up to last July he had been able to collect statistics of published results of treatment in 7,166 cases of diphtheria treated with the antitoxin, showing a mortality of 17.3 per cent., as compared with an estimated mortality of 42.1 in cases treated previously or simultaneously without the antitoxin. In 648 cases treated with the antitoxin in which tracheotomy was performed the mortality was 39.8 per cent.; in 342 in which intubation was practised the mortality was 28.9 per cent.; in 26 in which intubation was followed by tracheotomy the mortality was 53.8 per cent.; in 211 cases in which it is not stated whether tracheotomy or intubation was practised the mortality was 40.2 per cent. The estimated mortality in cases treated simultaneously or previously without the antitoxin was 64.5 per cent. after tracheotomy and 62.4 per cent. after intubation. Making all due allowance for the small possibility of the diphtheria epidemics over such wide areas as those represented in this report being of a mild character, and also for the somewhat greater possibility of the effect of the fact that milder cases are now sent to hospital, the reduction in mortality is still a great and remarkable one.

A class of cases in which the question as to the mildness or severity of the epidemic, etc., can have manifestly no effect upon the value of statistics is that which have required operation for laryngeal stenosis. The remarkable diminution in the mortality in these cases shown by Welch's table places the value of antitoxic serum beyond possible doubt. The percentage of cases of laryngeal diphtheria recovering without operation has also been markedly improved.

A clinical fact which early gained recognition, and which has been shown by Welch to be based on the pathology of the disease, namely, that the mortality is markedly decreased in the cases where the treatment is begun early, has been further proven as our experience has extended. An analysis with reference to this point of 1,729 cases of diphtheria with a mortality of 14.9 per cent., showed that in 1,115 cases treated within the first three days of the disease the mortality was 8.5 per cent, while in 546 cases where the serum was injected later than the third day of the disease the mortality was 27.8 per cent.

Adverse opinions on the value of the serum have been few, and the arguments used to sustain them have been usually of a kind in which prejudice predominated over logic, and the character of which has plainly shown a reluctance to abandon an adverse attitude taken at the outset and not sustained by a broad view of the facts.

Statements such as those of Mr. Lennox Browne that "a greater number of children have been found liable to attacks of cyanosis and fainting" and that "complete recovery is for the most part found to be greatly delayed," and "that an unexpectedly fatal result at a late period is more frequent," are supported neither by statistics nor by the published opinions of other observers.

The effect of antitoxin upon the three most important complications of diphtheria — nephritis, heart-failure and paralysis — has been found to be rather favorable than otherwise. A few cases have been reported in which death has been thought to be due to the serum. There has been no satisfactory evidence in any of them that such was the case; and, as Welch rightly says, "the essential harmlessness of the serum has been demonstrated by over a hundred thousand injections." Behring in an address delivered lately at Lubeck before the German Society of Naturalists and Physicians, practically takes the same position as Welch, claiming that by the use of the antitoxin treatment the mortality of diphtheria may be reduced at least 75 per cent.

With regard to the effect of the general employment of antitoxin upon municipal mortality-rates from diphtheria, the report made on October 14th by the health department of New York City to the mayor may be cited. This report states that "the reduction in the mortality-rate for the first, second and third quarters of 1895, as compared with average death-rate for corresponding periods of previous four years, has been 43.94 per cent. The large reduction in the mortality-rate from diphtheria and croup for the first three-quarters of 1895 is attributed mainly by the medical officers of this department to the introduction and use of diphtheria antitoxin, and if this remedy had been generally or universally employed, the reduction in the mortality-rate would doubtless have been larger."

In Boston the percentage of mortality from diphtheria is shown by the reports of the board of health to have decreased in marked degree. This decrease may be partly accounted for by the early discovery of many cases by the new system of inspection of the public-school children, but is probably also due largely to the general use of antitoxin.

In London, on the contrary, a great increase has taken place since September, both in the number of cases reported and in the mortality. It is noteworthy that this increase in diphtheria in London has been accompanied by a similar marked increase in small-pox and other infectious diseases. It is also noteworthy that in September the supply of antitoxin serum to the hospitals of the Metropolitan Asylums Board by the laboratories of the Royal College of Physicans and Surgeons was begun. The poor success attending the serum treatment in England, as has been noted by the *British Medical Journal,* is apparently confined to that country.

In Paris throughout the year, the mortality from diphtheria has remained extremely low, only 1 to 11 deaths a week being reported in that city, a mortality considerably lower than the coincident mortality of measles.

The experience of London during the past autumn has been directly at variance with that of Paris and other large cities where the antitoxin treatment is extensively carried out, in that the mortality from diphtheria has markedly increased within the last two months. Whether this may be due to a failure to efficiently apply the serum treatment or to a deterioration in the supply of the antitoxin is an interesting question.

No conclusion to this sketch could be more fitting than the words with which Welch closes his most valuable paper on this subject:

"The principal conclusion which I would draw from this paper is that our study of the results of the treatment of over 7,000 cases of diphtheria by antitoxin demonstrates beyond all reasonable doubt that anti-diphtheric serum is a specific curative agent for diphtheria, surpassing in its efficacy all other known methods of treatment for this disease. It is the duty of the physician to use it.

"The later reports show in general a decided improvement in the results of the treatment over the earlier ones, and there is every reason to believe that the results of the second year's employment of the new treatment will make a much more favorable showing than those of the first year. We shall come to a clearer understanding of the mode of action of the healing serum. Improvements in the methods of preparation and preservation of the serum, and possibly the separation of the healing substance, at least from other ingredients which produce the undesired effects, may be expected.

"The discovery of the healing serum is entirely the result of laboratory work. It is an outcome of the studies of immunity. In no sense was the discovery an accidental one. Every step leading to it can be traced, and every step was taken with a definite purpose and to solve a definite problem.

"These studies and the resulting discoveries mark an epoch in the history of medicine. It should be forcibly brought home to those whose philozoic sentiments outweigh sentiments of true philanthropy, that these discoveries which have led to the saving of untold thousands of human lives have been gained by the sacrifice of the lives of thousands of animals, and by no possibility could have been made without experimentation upon animals."

Sero-Therapy in Tetanus. — A number of cases of the treatment of tetanus with its antitoxin have been reported during the year, the majority of which have been successful. The importance of an early application of the treatment is even greater in this disease than in diphtheria, owing to the fact that quite early in the progress of a case, even before it is possible to recognize it, so large a quantity of toxin may be absorbed into the system as to require a dose of antitoxin so large that it becomes impracticable to administer it. This fact gives us a great advantage in the sero-therapy of diphtheria over that of tetanus.

Sero-Therapy in Tuberculosis. — The interest in sero-therapy which has been brought about during the year by the success of the antitoxin treatment of diphtheria, has led to attempts at sero-therapy in many affections, some of the attempts having a rational basis, and some not. Among these attempts may be mentioned the employment of the blood-serum of animals supposed to be immune to tuberculosis, such as horses, asses, etc. Systems of treatment based on such supposed immunity have been carried out by Professor Maragliano of Genoa, Dr. Paul Paquin of St. Louis, and others. Although favorable results have been reported for these, as for all other new methods of treatment for tuberculosis that have ever been exploited, the results on eliminating the personal equation of their sponsors, cannot be said to be very brilliant. The practice of reporting "cures" in cases of a disease which progresses so slowly as tuberculosis within a few months after the beginning of any treatment, cannot be too strongly condemned.

With regard to the treatment by "anti-phthisis," a serum which is claimed by its advocates to be a kind of tuberculin refined in some manner so as to be free from the dangerous liability of disseminating the disease which tuberculin has been shown to possess, it can be said that up to the present time we have no satisfactory evidence of its value. In laboratory experiments the results have been good, and good beginnings are reported to have been made in the clinical use of the remedy, but in regard to this we must again repeat, that the chronicity of the disease, and the tendency to relapse are so great, that no observations have been recorded covering anything like a satisfactory length of time for judgment.

Inoculations against Cholera. — At the Indian Medical Congress at the close of 1894, Haffkine presented his results from the inoculation against cholera up to that time. The results were so favorable that the medical profession were unanimously of the opinion that the inoculations should be tried on as large a scale as possible. Dr. W. J. Simpson, health-officer, reported to the Corporation of Calcutta on July 15, 1895, that since the Haffkine system was introduced 4,397 persons had been inoculated. Opportunities for comparing the liability to cholera of the inoculated with the uninoculated living in the same houses and under the same conditions have occurred 36 times. In the 36 houses there were 521 inmates, 181 were inoculated and 321 were not. Among the uninoculated members of these houses there were 45 cases and 39 deaths. Among the inoculated there were 4 deaths. These figures show that the uninoculated were 6.08 times more liable to attack, and 5.27 times more liable to death from cholera than the inoculated. Haffkine's results also show that a period of eight days is required for the inoculation to protect the system.

Certain cases occurred where the proportion of inoculated living in a house was much larger than the uninoculated, and where cholera picked out the uninoculated leaving the inoculated free.

The showing made in this report is on the whole extremely favorable, and indicates that the method deserves further trial.

Sero-Therapy in Streptococcus Infection. — A few cases have been reported of the treatment of streptococcus infection by its antitoxin, cases of erysipelas and lymphangitis, streptococcus angina and puerperal septicemia being among the number. Although the results have generally been favorable, experience is not yet sufficient to justify any conclusions as to the value of this antitoxin.

Quarantine. — The work of the United States quarantine officers during the year has been discussed at some length under the heading, "Epidemics." The importance and value of our quarantine service can hardly be overestimated.

Under the last regulations of the United States Treasury Department, the plague has been declared quarantinable, along with cholera, yellow-fever, typhus, variola and leprosy.

MEDICAL CONGRESSES AND MEETINGS.

The most important medical congresses held this year were the International Congress of Physiologists at Berne, and the International Congress of Railway and Marine Hygiene held at Amsterdam in September. At this latter congress a subject of great practical interest for the public safety, the necessity for efficient eye-sight in traffic conductors, was the chief subject of discussion. Professor Suellen, of Utrecht, consulting ophthalmic surgeon to the Dutch Railways called attention to the increasing importance of this question in view of the increasing amount of travel for business and recreation. He traced the development of the movement for securing better control which originated with Wilson of Edinburgh, and was supported by Favre in France, Holmgren in Sweden, Cohen and Donders in Holland, and Joy Jeffries in America. The papers and discussing which followed were of great interest, and will it is to be hoped result in actual improvement of the Service.

At the Congress of Physiologists, Professors Goltz and Ewald presented a most important communication on the functions of the spinal cord, and Professor Langley on the function of the sympathetic system. Papers were also presented by Professors Herzen of Lausanne, Tigerstedt of Stockholm, Dastor of Paris, Gotch of Oxford and others. Professors Hürtle and Mosso each demonstrated a new apparatus for the determination of the blood-pressure in man.

The American Surgical Association met in New York, May 28th to 30th; the American Association of Obstetricians and Gynecologists, in Chicago, September 24th to 26th; the American Dermatological Association, in Montreal, Canada, September 17th to 19th; the American Orthopedic Association, in Chicago, September 17th to 19th; the Association of American Physicians, in Washington, May 30th to June 1st; the American Laryngological Association, in Rochester, N. Y., June 17th to 19th; the American Neurological Association, in Boston, June 5th to 7th; the American Pediatric Society, at Hot Springs, Virginia, May 27th to 29th; the American Association of Genito-Urinary Surgeons, at Niagara Falls, May 28th to 31st; the American Medical Association, at Baltimore, in May; the Association of Military Surgeons of the United States, at Buffalo, N. Y., in May; the American Public Health Association, at Denver, Col., October 1st to 4th; the American Medico-Psychological Association, at Denver, Col., June 11th to 14th; the American Academy of Medicine, at Baltimore, in May; the American Electro-Therapeutic Association, at Toronto, Can., September 3d to 5th; the American Academy of Railway Surgeons, at Chicago, September 25th to 27th; the Mississippi Valley Medical Association, in Detroit, September 3d to 6th; the Southern Surgical and Gynecological Association, at Washington, D. C., November 12th to 14th; the Tri-State Medical Society, of Alabama, Georgia and Tennessee, in Chattanooga, October 8th to 10th; the New York State Medical Association, in New York City, October 15th to 17th. The Massachusetts Medical Society held its one hundred and fourteenth anniversary meeting, in Boston, on June 12th. The Medico-Legal Congress was held at New York, the last week in August.

The sixty-third annual meeting of the British Medical Association was held in London, July 30th to August 2d; the third International Congress of Physiologists was held in September, from the 10th to the 14th of the month, at Berne, Switzerland; the twenty-fourth Congress of the Association of German Surgeons was held at Berlin from the 17th to the 20th of April; the International Congress of Gynecology and Obstetrics met at Geneva, in September; the sixth Congress of the German Association of Gynecologists was held in Vienna, June 4th to 7th; the ninth Congress of the French Surgical Association was held at Paris, October 21st; the Association of German Alienists held its annual meeting this year in Hamburg, September 13th and 14th; the annual Italian Congress of Internal Medicine was held at Rome in October; a National Congress on Tuberculosis was held at Coimbra, Portugal, beginning on the 24th of March; the German Society of Naturalists and Physicians met this year at Lubeck.

LECTURES.

In connection with established lectureships in the United States and Great Britain, the following lectures and orations were delivered:

The Wesley M. Carpenter Lecture, before the New York Academy of Medicine, "On the Important Facts Relative to Malignant Disease," by Joseph D. Bryant, M.D.; the Shattuck Lecture before the Massachusetts Medical Society, by Robert T. Edes, M.D., on "The New England Invalid." In Great Britain the Goulstonian Lectures on the "Supra-Renal Bodies," by H. D. Rolleston, M.A., M.D., F.R.C.P.; the Lumleian Lectures on "The Diagnosis, Prognosis and Prophylaxis of Insanity," by G. Fielding Blandford, M.D., F.R.C.P.; the Milroy Lectures on "The Natural History and Affinities of Rheumatic Fever," by Arthur Newsholme, M.D., Lond., M.R.C.P.; the Lettsomian Lectures on "The Combinations of Morbid Conditions of the Chest," by Frederick T. Roberts, M.D., F.R.C.P.; the Ingleby Lectures on "Appendicitis and Perforation of Gastric Ulcer," by Gilbert Barling, M.B., F.R.C.S.; the Croonian Lectures, "Contribution to the History of the Respiration of Man," by W. Marcet, M.D., F.R.C.S.; the Hunterian Lectures on "The Experiences of St. George's Hospital in Laparotomy," by Timothy Holmes, F.R.C.S.; the Bradshaw Lecture on "Some New Vaso-Dilators" by Professor J. B. Bradbury, M.D., F.R.C.P.; the Harveian Oration on "Harvey and the Rise of Physiology in England," by W. S. Church, M.D., F.R.C.P.; the Cavendish Lectures on "Dreamy Mental States," by Sir James Crichton Browne, M.D., LL.D., F.R.S.; the Baillie Lectures on "Dropsy," by W. Howship Dickinson, M.D., F.R.C.P., Lond.

NECROLOGY.— FOREIGN.

Adolphe von Bardeleben, M.D., professor of surgery in the University of Berlin, died in that city September 24, aged seventy six.

George Octave Dujardin-Beaumetz, M.D., commander in the Legion of Honor, editor-in-chief of the *Bulletin de Thérapeutique* and the author of many suggestive works on subjects in clinical medicine, therapeutics and hygiene, died in Paris, February 16, aged sixty-one.

John Syer Bristowe, M.D., senior consulting physician to St. Thomas's Hospital and formerly president of many medical societies, died August 20.

Sir George Buchanan, M.D., F.R.S., late principal medical officer of the Local Government Board of Great Britain, and Chairman of the Royal Commission on Tuberculosis, died on May 5, aged sixty-four.

Louis Florentin Calmeil, M.D., the distinguished French specialist in psychological medicine, died on March 11, aged ninety-seven.

Arthur E. Durham, F.R.C.S., consulting surgeon to Guy's Hospital, died May 7, aged sixty-four.

J. Gottstein, M.D., the eminent laryngologist, died in Breslau, January 10, aged sixty-three.

Alphonse Guérin, the distinguished French surgeon, died February 21, aged seventy-eight.

John Whitaker Hulke, M.D., F.R.C.S.E., President of the Royal College of Surgeons of England and senior surgeon to the Middlesex Hospital, died in London, on February 19, aged sixty-five.

Prof. Thomas H. Huxley, M.D., the distinguished writer on evolution, died at Eastbourne on June 29, aged seventy.

Dr. Enrico Jacolucci, of Naples, who in 1862 performed the first successful case of Cæsarean section in Naples, died in August.

Thomas Keith, M.D., LL.D. Edin., F.R.C.S. Edin., a distinguished surgeon and one of the leaders in the development of abdominal surgery, died October 9, aged sixty-eight.

Baron Felix Hippolyte Larray, M.D., a distinguished French military surgeon and formerly Grand Officer of the Legion of Honor, died early in October, aged eighty-seven.

Surgeon-General Sir Thomas Longmore, M.D., an eminent British surgeon, died on September 30, at the age of seventy-nine.

Karl Ludwig, M.D., the eminent physiologist, died at Leipsic, April 26, aged seventy-nine years. He had been professor of physiology in Leipsic since 1865, and for the preceding ten years had held the chair of physiology in Vienna.

Henry Widenham Maunsell, M.A., M.D., M.R.C.S., a distinguished surgeon, aged forty-eight, died on February 21.

Willhelm Meyer, M.D., of Copenhagen, the discoverer of adenoid vegetations in the pharynx, died in June, aged eighty-one.

Friederich Miescher, M.D., professor of physiology at Basle, died at Davos, August 26.

M. Louis Pasteur, director of the Pasteur Institute, died at Villeneuve, on the morning of September 28, aged seventy-three.

Dr. Petronio, professor of surgical pathology and teacher of surgery in the University of Naples, died on March 1, at the age of fifty-five.

Franz von Reid, M.D., professor of surgery at Jena (retired), died June 10, aged eighty-five.

Sir William Scovell Savory, M.D., F.R.S., consulting surgeon to St. Bartholomew's Hospital, surgeon to the Charité Hospital, died in London on March 4, aged sixty-nine.

Kurt Schimmelbusch, M.D., Privat-Docent in surgery at the University of Berlin, died on August 1, aged thirty-five.

Hermann Seidel, M.D., professor of surgery, chief of the surgical section of the Brunswick Hospital, and for a long time assistant to Volkmann, at Halle, died in October, aged forty-one.

Dr. Felix Hoppe-Seyler, professor of physiological chemistry in the University of Strasburg, died on August 12, aged seventy.

Karl Thiersch, M.D., professor of surgery in Leipsic, died April 28, aged seventy-three.

Sir John Tomes, M.D., F.R.C.S., who was called the father of the dental profession in England, died July 29, aged eighty.

D. Hack Tuke, M.D., F.R.C.P., LL.D., the author of well-known works on mental diseases, died in London on March 5, aged sixty-eight.

M. Verneuil, the oldest professor of surgery in the Paris Faculty, died June 12.

NECROLOGY.—UNITED STATES.

Robert Battey, M.D., of Rome, Ga., a distinguished surgeon and gynecologist, died November 15, aged sixty-seven.

John M. Byron, M.D., chief of the bacteriological department of the Loomis Laboratory and lecturer on that branch in the University Medical College, died of tuberculosis (probably contracted in his laboratory work) May 7, aged thirty-four.

Thomas H. Chandler, M.D., D.M.D., dean and professor of mechanical dentistry in the Harvard Dental School, died August 27.

James Collins, M.D., of Philadelphia, a member of the staff of the German Hospital for twenty-five years, died in that city October 7, aged sixty-five.

George Cupples, M.D., a former president of the Texas State Medical Association and a surgeon of reputation, died April 19, aged eighty.

William Detmold, M.D., emeritus professor of clinical and military surgery in the College of Physicians and Surgery of New York, died December 26, 1894, aged eighty-seven.

Frank L. Dubois, M.D., medical inspector, United States Navy, died February 24, at Portsmouth, N. H., after thirty-three years in the service.

Dr. James E. Garretson, dean of the Philadelphia Dental College, and known for his scientific contributions on diseases of the mouth, died on October 27, at the age of sixty-seven years.

Albert C. Gorgas, M.D., medical director, U. S. N., died in Germantown, June 29, 1895.

Lewis D. Harlow, M.D., one of the founders and at one time president of the Philadelphia Obstetrical Society, died in Philadelphia, June 23, aged seventy-seven.

William C. Jarvis, M.D., clinical professor of laryngology and rhinology in the medical department of the University of the City of New York, died July 30, aged forty.

Thomas Leach, M.D., medical inspector, U. S. N. (retired) died December 30, aged fifty-eight years and eight months.

Alfred L. Loomis, M.D., professor of medicine in the medical department of the University of the City of New York, died January 23, aged sixty-four.

Geo. A. Mursick, M.D., of Nyack, N. Y., distinguished for his service in the U. S. Army during the Civil War, died October 17, aged sixty-one.

Ferdinand W. Ostrander, M.D., the oldest practising physician in Brooklyn, died at his residence in that city on January 30, aged ninety-one.

Ezra R. Palmer, M.D., professor of physiology in the University of Louisville, Kentucky, died July 6, aged fifty-three.

Henry W. Rand, M.D., of Brooklyn, attending surgeon at the Long Island and at St. John's Hospitals, died in that city August 31, aged forty-four.

John A. Ryder, M.D., professor of comparative embryology in the University of Pennsylvania and a very distinguished embryologist, died on March 26, at the age of forty-three.

J. D. Robinson, M.D., Wooster, O., who is said to have performed the first amputation in the War of the Rebellion, died May 9, aged seventy-five.

Dr. William S. W. Ruschenberger, medical director U. S. N. (retired), died March 24, in Philadelphia, aged eighty-eight.

Gilbert Saltonstall, M.D., health inspector of Jersey City, died June 15, aged sixty-six.

Surgeon-General Charles Sutherland, M.D. (retired), died at Washington, May 11, aged sixty-six.

Bernard E. Vaughn, M.D., assistant surgeon to the New York Cancer Hospital, died on March 5.

Joshua Greene Wilbur, M.D., of Brooklyn, an army surgeon during the four years of the war, and afterward a prominent life insurance examiner, died at Montclair, N. J., June 25.

John S. Young, M.D., of Brooklyn, a former secretary and vice-president of the Kings County Medical Society, died September 23, aged sixty-three.

John Lloyd Zabriskie, M.D., consulting physician to the Long Island College Hospital and Kings County Hospital, died in Brooklyn, November 10, aged sixty-four.

NECROLOGY.— MASSACHUSETTS MEDICAL SOCIETY.

Benjamin Faneuil Dunkin Adams, M.D. (formerly of Waltham), died at Colorado Springs, Col., October 28, aged fifty-six.

Jonathan Wheeler Bemis, M.D., of Cambridge, died January 6, aged eighty-four.

Stephen Wallace Bowles, M.D., of Springfield, died February 12, aged fifty-nine.

Patrick Henry Campbell, M.D., of Dorchester, died May 3, aged thirty.

William Mason Cornill, M.D., of Boston, died April 14, aged ninety-four.

Benjamin Cushing, M.D., of Dorchester, died October 16, aged seventy-three.

Lemuel Dickerman, M.D, of Foxboro, died August 14, aged sixty-nine.

Dyer Ball Nelson Fish, M.D., of Amherst, died October 28, aged fifty-seven.

Cyrus Mentor Fisk, M.D., formerly of Lowell, Mass., died at Bradford, N. H., January 21.

Frank Lyman Forsyth, M.D., of Providence, R. I., died May 11, aged 41.

Nathan French, M.D., of Malden, died April 27, aged eighty-four.

Moses Reuben Greely, M.D., of South Weymouth, died April 23, aged sixty-seven.

Joseph Hagar, M.D., of East Marshfield, died April 9, aged seventy-five.

Jonas Cowdry Harris, M.D., of Arlington, died February 10, aged seventy-five.

Joseph W. Hastings, M.D., of Warren, died September 23, aged sixty-one.

Henry Alfred Jewett, M.D., of Northborough, died August 23, aged seventy-five.

William Mack, M.D., of Salem, died June 9, aged eighty.

Edwin Mayberry, M.D., of East Weymouth, died July 18, aged sixty-eight.

Edward McGlynn, M.D., of Roxbury, died July 26, aged thirty-two.

David Worthington Minor, M.D., of Ware, died January 2, aged seventy-four.

George A. Perkins, M.D., of Salem, died May 18, aged eighty-two.

Levi Pillsbury, M.D., of Fitchburg, died February 4, aged seventy-seven.

Frederic Augustus Sawyer, M.D., of Wareham, Vice-President of the Massachusetts Medical Society, died February 10, aged sixty-two.

Horatio S. Soule, M.D., of Winthrop, died October 7, aged seventy-two.

Charles Parker Spalding, M.D., of Lowell, died March 25, aged forty-six.

George Newton Thomson, M.D., of Boston, died July 13, aged eighty-two.

Samuel Knapp Towle, M.D., of Haverhill, died August 16, aged sixty-five.

Albert Francis Tracy, M.D., of Westfield, died July 18, aged thirty-two.

Elisha Gustavus Tucker, M.D., of Boston, died May 18, aged eighty-six.

George Clark Webber, M.D., of Millbury, died June 11, aged fifty-seven.

Henry Willard Williams, M.D., of Boston, died June 14, aged seventy-three.

Charles Sayward Young, M.D., of Stoughton, died May 16, aged forty-three.

David Youngman, M.D., of Boston, died May 11, aged seventy-seven.

Since the last report thirty-three members of the Society have died, nine more than in the preceding year. The average age was sixty-six years, as against sixty and one-tenth years in 1894. Sixteen were over seventy years, seven over eighty, and one ninety-four years of age, a remarkably high average. There were only two deaths under forty.

FATAL ACCIDENTS IN THE ALPS. — Eighteen fatal accidents occurred in the Alps last summer, four in the French Alps, six in the Swiss, six in the German and Austrian, and two in the Italian Alps.

VACCINATION VIRUS VANQUISHER.— The above is the name of a patent medicine which is being exploited in England as "rendering all vaccination safe," that is, free from all ill-effects. The medicine has to be taken before vaccination. By the time vaccination has been performed, the remedy will have entered the blood, and, so says the promoter, "will be there, as it were, to meet the germs as they enter, and quickly kill them. Thus the diseases are clearly prevented, as the germs never get the smallest chance to begin their nefarious work." But it is further insisted upon that "the medicine does not in any way affect pure vaccine lymph, and the benefits of vaccination are not, therefore, in any way lessened or interfered with." It is surely a matter of pride for our day and generation that so distinguished a man as the discoverer of this remedy has arisen to round out and supplement the work of the great Jenner.

METEOROLOGICAL RECORD,

For the week ending December 14th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...8	30.14	34	42	25	70	78	74	W.	N.	13	9	C.	C.	
M...9	30.24	24	30	19	86	77	82	N.W.	N.W.	10	7	O.	O.	
T..10	30.11	24	30	17	84	59	72	N.W.	N.	10	12	F.	F.	
W..11	29.91	18	23	14	80	61	70	N.	N.	26	26	N.	O.	
T..12	30.24	12	16	8	65	38	52	N.	N.	18	20	O.	O.	
F..13	30.27	14	18	10	79	64	72	N.	N.	24	22	N.	O.	.01
S..14	29.90	22	29	16	73	41	57	N.	N.	20	12	O.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 14, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,892,332	708	251	11.88	17.76	1.54	.84	5.88
Chicago . . .	1,678,967	396	136	20.75	6.25	3.50	1.75	11.50
Philadelphia .	1,164,000	390	134	15.75	15.00	.50	3.00	10.50
Brooklyn . .	1,100,000	415	138	18.96	16.56	.72	1.20	13.44
St. Louis . . .	560,000	—	—	—	—	—	—	—
Boston . . .	494,205	214	60	15.84	16.80	.48	1.44	12.68
Baltimore . .	496,315	190	68	14.04	12.48	3.12	—	7.80
Cincinnati . .	336,000	124	33	8.10	28.35	—	4.86	1.62
Cleveland . .	314,537	88	29	15.96	12.54	7.98	—	6.84
Washington .	275,500	—	—	—	—	—	—	—
Pittsburg . .	238,617	93	38	22.68	11.88	2.16	4.32	4.56
Milwaukee . .	265,000	—	—	—	—	—	—	—
Nashville . .	87,754	37	7	2.71	16.26	—	—	—
Charleston . .	65,165	36	12	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Worcester . .	98,687	30	12	20.00	23.33	—	6.66	6.66
Fall River . .	88,020	32	13	34.43	18.78	18.78	—	12 52
Lowell . . .	84,359	32	9	6.26	21.91	—	—	—
Cambridge . .	81,519	20	7	25.00	5.00	—	5.00	15.00
Lynn	62,355	18	8	16.66	5.55	—	—	16.66
New Bedford .	55,254	24	7	—	—	—	—	—
Springfield . .	51,534	10	3	30.00	10.00	10.00	—	20.00
Lawrence . .	52,153	14	5	—	14.28	—	—	—
Holyoke . . .	40,149	—	—	—	—	—	—	—
Salem	34,437	11	2	—	27.27	—	—	—
Brockton . .	33,157	7	3	14.28	28.56	—	—	14.28
Haverhill . .	30,185	4	2	25.00	25.00	—	25.00	—
Malden . . .	29,706	5	2	—	—	—	—	—
Chelsea . . .	31,295	14	2	7.14	—	—	—	7.14
Fitchburg . .	26,394	8	3	12.50	—	—	12.50	—
Newton . . .	27,022	6	2	—	33.33	—	—	—
Gloucester . .	27,663	—	—	—	—	—	—	—
Taunton . . .	27,093	11	1	—	—	—	—	—
Waltham . .	20,877	2	1	—	—	—	—	—
Quincy . . .	20,712	8	2	—	—	—	—	—
Pittsfield . .	20,447	3	1	—	—	—	—	—
Everett . . .	18,578	2	1	—	—	—	—	—
Northampton .	16,738	3	—	—	33.33	—	—	—
Newburyport .	14,554	4	1	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 3,029; under five years of age 1,008; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 463, acute lung diseases 462, consumption 339, diphtheria and croup 267, diarrheal diseases 53, typhoid fever 52, measles 29, scarlet fever 21, erysipelas 13, whooping-cough 11, cerebro-spinal meningitis 10, malarial fever 5, small-pox 2.

From measles New York 15, Baltimore 5, Brooklyn and Providence 3 each, Philadelphia 2, Cincinnati 1. From scarlet fever New York and Pittsburgh 6 each, Brooklyn 3, Chicago, Philadelphia, Baltimore, Boston, Providence and Fall River 1 each. From erysipelas Chicago 5, Brooklyn and Pittsburgh 2 each, New York, Boston, Worcester and Cambridge 1 each. From whooping-cough Philadelphia and Brooklyn 3 each, Chicago, Boston, Cincinnati, Cleveland and Providence 1 each. From cerebro-spinal meningitis Chicago 7, New York, Philadelphia and Worcester 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530, for the week ending November 30th, the death-rate was 17.9. Deaths reported 3,639; acute lung diseases (London) 285, measles 211, diphtheria 93, fever 65, whooping-cough 63, diarrhea 48, scarlet fever 46, small-pox (West Ham 2, London 1) 3.

The death-rates ranged from 11.3 in Croydon to 29.0 in Blackburn; Bradford 13.1, Birmingham 19.5, Brighton 12.2, Gateshead 14.1, Hull 16.4, Leeds 18.3, Leicester 14.3, Liverpool 23 3, London 17.3, Manchester 21.0, Newcastle-on-Tyne 16.6, Nottingham 17.0, Plymouth 18.7, Sheffield 18.9, Sunderland 18.2, West Ham 17.1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530, for the week ending December 7th, the death-rate was 17.9. Deaths reported, 3,644; acute diseases of the respiratory organs (London) 264, measles 207, diphtheria 109, whooping-cough 80, fever 66, scarlet fever 54, diarrheal diseases 51, small-pox (West Ham 2, London and Oldham 1 each) 4.

The death-rates ranged from 10.0 in Croydon to 28.9 in Liverpool: Birmingham 18.4, Bradford 16.1, Bristol 17.6, Gateshead 17.4, Hull 17.1, Leeds, 18.2, Leicester 15.3, London 17.3, Manchester 23.5, Newcastle-on-Tyne 15.4, Nottingham 14.3, Sheffield 16.1, Swansea 16.1, West Ham 15.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 14, 1895, TO DECEMBER 20, 1895.

CAPTAIN GUY L. EDIE, assistant surgeon, is granted leave of absence for four months.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING DECEMBER 15, 1895.

STONER, G. W., surgeon. Granted leave of absence for thirty days. December 6, 1895.

GLENNAN, A. H., passed assistant surgeon. Granted leave of absence for ten days. December 5, 1895.

PETTUS, W. J., passed assistant surgeon. To assume temporary command of service at Norfolk, Va., in addition to present duties, during absence of Surgeon H. R. CARTER. December 13, 1895.

KINYOUN, J. J., passed assistant surgeon. Granted leave of absence for twenty-three days. December 12, 1895.

COBB, J. O., passed assistant surgeon. Granted leave of absence for two days. December 5, 1895.

BLUE, RUPERT, assistant surgeon. Granted leave of absence for eighteen days. December 3, 1895. Detailed to make physical examination of immigrants at San Francisco, Cal. December 13, 1895.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, December 30th, at 8 o'clock.

Papers: Dr. S. H. Durgin, "One Year's Experience in the Medical Inspection of Schools and the Supervision over the Isolation and Release of Infectious Persons."

Dr. H. C. Ernst, "One Year's Experience in Cultural Diagnosis of Diphtheria, illustrated by a chart." Discussion by Drs. H. P. Walcott, C. M. Green, H. E. Marion, and Messrs. E. P. Seaver, Superintendent of Schools, J. A. Page, master of the Dwight School and A. H. Kelly, master of the Lyman School.

Dr. F. C. Cobb will read on "Empyema of the Antrum" and show cases.

JAMES G. MUMFORD, M.D., *Secretary*.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, January 2, 1896, at 8 P. M., by DR. J. ORNE GREEN. Subject: "Otitic Brain Diseases and their Treatment." The profession are invited.

CORRECTION.

In the issue of the JOURNAL for December 19th, in the review of the Twentieth Century Practice, p. 629, Sanborn should read Sansom, and in the sentence on the second column, "Dr. Murray has apparently had no personal experience with the extract of thyroid gland in exophthalmic goitre," the word *thyroid* should read *thymus*.

APPOINTMENT.

HENRY PARKMAN, ESQ., has been appointed trustee of the Boston City Hospital, in place of **GEORGE B. NICHOLS, ESQ.**, deceased.

Dr. FRANCIS C. MARTIN'S VACCINE VIRUS.

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BENZOSOL IN DIABETES.

In a paper on this subject, Dr. J. Blake White, of N. Y., Physician to the City Hospital, says, "BENZOSOL certainly manifests a most potent influence in controlling elaboration of Sugar."

Reprint of Dr. White's interesting paper sent upon request.

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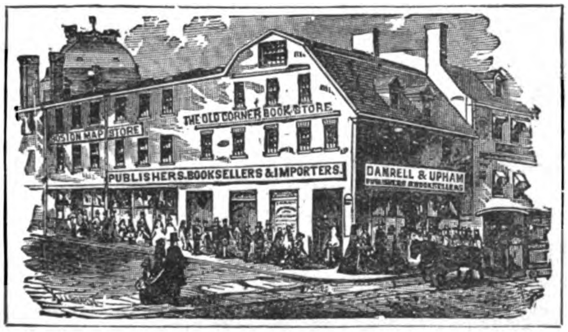
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INDEX TO ADVERTISEMENTS.

Adams Nervine Asylum 19
Antikamnia Chemical Company...Antikamnia 26
Apollinaris Co. 14
Baker, L. W., M.D.... ....Riverview 19
Baker, Dr. W. H...................Card 19
Battle & Co. ....Bromidia 23
Bellevue Hosp. Med. Col. .... Sessions of '94-95 16
B. H. R. Distilling Co. 29
Boehringer & Soehne..................Ferratin 12
Borine Chemical Co 24, 25
Bowdoin College...........Medical Department 16
Boylston Medical Prize Questions............ 2
Breitenbach Co., M. J...........Pepto-Mangan 4
Castle, W. & Co..................Steam Sterilizer 17
Channing, Dr. Walter.................... 19
Chauncy Hall School.................... 31
Cocke, Dr. James B.................... 19
Codman & Shurtleff......Surgical Instruments 13
Coll. of Physicians and Surgeons, Boston... 16
Crittenton, C. N...........Hydroleine, etc. 4, 13, 18
Cutter, Dr. W. P 19
Dartmouth College, N. H....Med. Department 16
Dios Chemical Co.................... 5
Douglass, Dr. DeF ....Artificial Limbs 8
Edes, Dr. R. T.................... 19
Fairchild Bros. & Foster.........Milk Mixture 1
Farwell & Rhines.................Diabetes Flour 2
Feeble-Minded Youth, Inst. for..Barre, Mass. 19
Fisk & Arnold....................Artificial Limbs 8
Flood, Dr. Everett.................... 19
For Sale.........................Office Furniture 2
Fougera, E. & Co...............Imp'g Pharmacists 9, 27
Gear, J. Frank............Surgical Instruments 7
Goldthwaite, Dr. S. V.................... 19
Graham, Dr. Douglas......Treatise on Massage 25
Greene, Dr. E. M.........Examinations of Sputa 19
Harvard Baby Food Co.................... 18
Harvard University........Dental Department 16
Harvard University.......Medical Department 32
Johnson & Johnson.........................Kola 21
Just's Food Co.................... 4
Lambert Pharmacal Co ....Listerine 20
Leedom, Charles..............Nuclein Solution 7
Lehn & Fink:.....................Mfg. Chemists 3
Lloyd, Andrew J. & Co. .....Manufg. Opticians 2
Londonderry Lithia Water.................... 11
Long Island College Hospital.................... 16
Mackie, Dr. L. V. G. .... Sanitarium 19
Marks, A. A.....................Artificial Limbs 20
Martin, Dr. F. C..................Vaccine Virus 31
McArthur Hypophosphite Co.................... 6
McElroy, P. J..................Glass Syringes 8
Medical Practices, etc.................... 2
Medico-Chirurgical College 16
Norton, Dr. Eben C....... ....Card 19
N. Y. Pharmacal Association....Lactopeptine 14
N. Y. Polyclinic and Hospital.................... 16
N. Y. Post-Graduate School and Hospital.. 17
Oakland Chemical Co.......Hydrogen Dioxide 30
Office To Let.................... 2
Pabst Brewing Co.................... 7
Patch, E. L. Co..................Lithia Tablets 6
Peake & Buzzell ....Surgeons' Supplies 25
Pinaud, Ed.......................Sels Romains 22
Planten, H., & Son.....................Capsules 8
Polk, R. L. & Co........Med. and Surg. Register 28
Position Wanted.................... 2
Purdue Frederick Co., The.................... 7
Removal...... 2
King, Dr. Allan Mott.........Nervous Diseases 19
Rosse, Dr. Irving C.................... 19
Russell, Dr. F. W ....Card 19
Schulze-Berge & Koechl.......Migranin, etc. 8, 31
Scott & Bowne.................... 5
Sted[illegible], Dr. Henry R.....................Card 19
Stillings, Dr. J. C. ....Card 19
Strong, Dr [illegible]..................Sanitarium 22
Thayer, H[illegible] & Co.................... 28
Theodore Metcalf Co ....Coca 10
Twitchell, Dr. George B.................. Card 19
Tyree, J. S. ....Litmus Pencil 6
Umpleby, J. T. ....Photography 6
University of Vermont,.................... 17
Vapo-Cresolene Co.................... 21
Walker Pharmacal Co................Phytoline 23
Walnut Lodge Hospital.................... 19
Warner, Wm. R., & Co................. Pills, etc. 15
Waterman, Dr. Thomas..Animal Vaccine Virus 2
Weeks & Potter Co. ....Quinon
Weinhagen, H.......................Thermometer
Wheeler, Dr. T. B....................Phosphate
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